Textile World

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MAR 6 1943

In this Issue:

UTILIZING MANPOWER AND WOMANPOWER

Standard U. S. Marine Corps Emblem.

WE SALUTE THE U. S. MARINES

. . . and the American manufacturers whose skill and effort provides them with the world's best equipment.

BUY U. S. WAR BONDS

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828

Scheler, Schramm & Vogel Established 1838

Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

SEVENTY-SEVEN FRANKIN ST., BOSTON

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Are You Thinking About Buying New Looms?

Why Not?

This War Will End Sometime and You'll Need New Looms

You are running your looms to capacity — on three shifts a day — under working and help conditions that will leave them far from efficient

There are new High Speed and High Quality Looms of far greater productive capacity than most of those you now have

You will want them — in fact you will Have to Have them to stay in the game — after the War

Why not Start Buying them — NOW — while it is Easy — on Your Own Installment Plan — setting aside periodically some of your surplus earnings in a Capital Reserve in Cash for New Looms?

Keep a Reserve in Cash

You'll Need It

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia Spartanburg S C

This goes for RING TRAVELERS too!

JUST ONE RESOURCE LEF'R

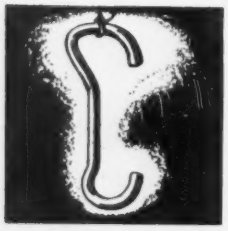
"Mr. Textile Manufacturer, do you know just what you have to do to make research work for you and to assure your survival over the war period, with inevitable dislocation of our economies, and to save a place for yourself in post-war adjustments?

"You must shed your conception of research as a force that is all right for the automobile manufacturer, the electrical equipment manufacturer, the paper manufacturer — to take to your heart the realization that *research is the answer for you, your company, and your industry.*"

From an editorial by Douglas G. Wolf, in Textile World.

THE BEVEL EDGE

Great pioneering "U. S." contribution to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension more even yarn, less "fly."

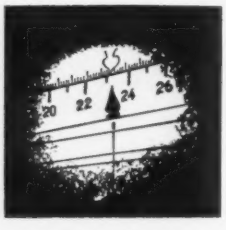


PERFECT BALANCE

Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

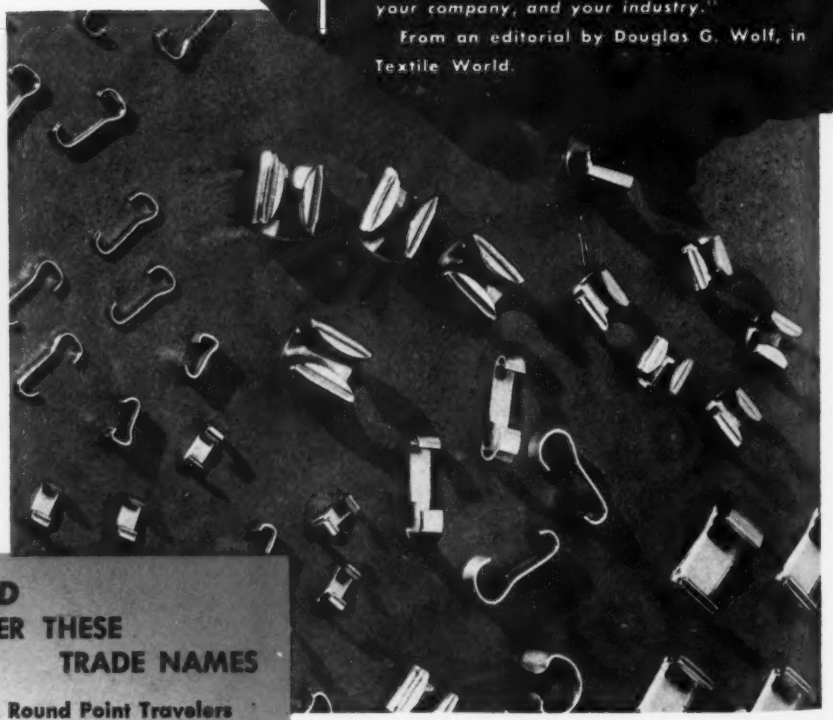
THE NE-BOW

Prevents yarn ends flying out, provides ample headroom for threading — prevents binding on ring. Note "bend inward" at top of horn.



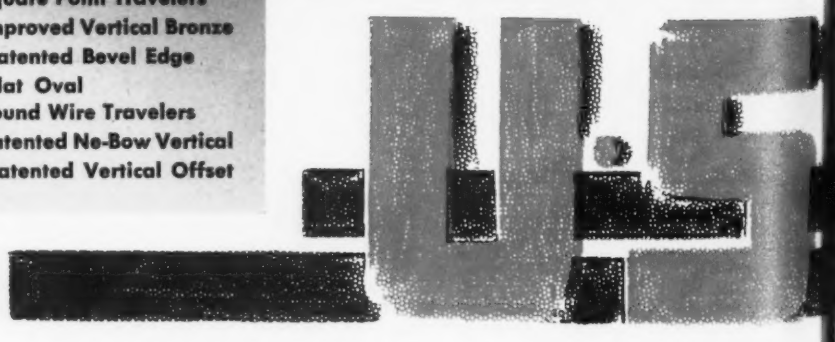
HEAT CONTROL

for better metal—dominates "U. S." production! Carburizing and tempering ovens are electrically controlled through pyrometers — for better performance.



SOLD UNDER THESE TRADE NAMES

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset



No. 7 OF A SERIES
BASED ON INTERVIEWS WITH TEXTILE MEN who want more production

F RESEARCH"

Are you taking full advantage of "U·S·" RESEARCH in Ring Travelers?

You know and we know that ring travelers are small items. But they exert a mighty influence in the spinning and twisting of fibers — in keeping up your production schedules. What you may *not* know is that the "U. S." Ring Traveler Company offers you the results, not only of *past* years of research in traveler design and construction, but the benefits of today's research based on modern conditions in up-to-date textile mills.

For instance, we are always "researching" on the heat treatment of bronze and steel ring travelers, for users faced with the necessity of using a lower grade metal with consequent trouble from short-lived travelers. Yes, Sir — we can take completely off your hands, if you so wish, the entire job of traveler research in your plant. We'll find out for you whether or not you are using the right type of ring traveler, or whether or not certain conditions in related equipment (rings — spindles) are reducing the efficiency of the travelers you are now using.

In brief, we stand ready to apply a complete Research Program to your yarn production problems insofar as they are influenced by your ring travelers — or vice versa. We stand ready to send a "U. S." expert to your mill, a mill man who knows what it's all about. "U. S." representatives are not "theorists". They're practical mill men, men who started at the bottom, been overseers, supers, run in frames themselves. Certainly you'll agree such men can work with you without wasting your time and money. Put modern "U. S." Traveler Research to work for your mill now — for the Victory to come and the Prosperity to follow.

U. S. RING TRAVELER COMPANY
PROVIDENCE AMOS M. BOWEN *President and Treasurer* **RHODE ISLAND**

RING TRAVELERS

A Traveler for Every Fibre

E TRAVELERS THAT KEEP GOING!

U.S. RING TRAVELER CO.

"Seed Money"

Comments by Henry G. Lord

I first met David Coker in 1919. We were crossing together on the old "Adriatic," to attend the World Cotton Conference in Liverpool and Manchester, where he made an impressive address on the subject of hybrid cotton seed.

David Coker and three or four other men are responsible for the distinct improvement in the quality of American-grown cotton during the last twenty years.

A crusader in the cause of cotton breeding, David Coker did not live to see the full recognition for his work. Today the Coker cotton-breeding plantations and the Coker strains are a major source of replenishment and improvement of the cotton crops, not only in the United States, but in all cotton-growing countries in the world.

Without that new seed and those improved strains, the cotton situation in America would be very different today from what it is.

You have to have the right seed and plenty of it if you expect to raise a good crop. It is equally important to have what we may call "Seed Money" if we expect to restore our mills to pre-wartime conditions and equip them with new and improved machinery.

The necessity of "Seed Money" was forcefully brought to my attention the other day. I was looking over a recent issue of "Cotton Chats." There was a picture showing the erecting room in the Draper plant, taken in pre-war times. It was filled with hundreds of looms in the process of construction. There was another picture of that same vast room, void of everything except the last loom which was being moved out to make way for equipment to manufacture war munitions. These two pictures, better than hundreds of words, dramatized the story of what the textile machinery builders are doing today and what the textile mills are up against. It means no more new machinery for the duration!

Meanwhile, the mills are turning out fantastic production. Most of them are running two and frequently three shifts, six or seven days a week; wearing out machinery and equipment. Many mills have been converted to the manufacture of products which would have been thought impossible on existing equipment.

The efficiency of this machinery constantly is being reduced by war. Much of it will be obsolescent after the war if it will not meet the demands of new products undreamed of three years ago.

How can we hope to replace this worn-out and obsolescent machinery with modern up-to-date equipment unless the Government permits a reasonable tax exemption for reserve with which to buy it? The men and the organizaitons who have accomplished the textile miracle of this war have the ability to do the job if they are given the necessary "Seed Money." Competition will be very keen after the war; hence every man who works in a mill or machine shop has a vital interest in "Seed Money"—in seeing to it that his Government allows his company the reserve with which to provide it and him with efficient machinery to meet that competition. Ask your Congressman what he is doing about it!

HENRY G. LORD, *Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World*

BLANKETS for BLUEJACKETS *Faster . . . Better*

SUNOTEX OILS

improve mixing . . . yarn tensile strength . . . scouring

The best is none too good for our boys on the fighting fronts . . . and the quicker they get equipment the better. That's the way a large New England textile mill felt about the contract they had for Navy blankets.

They were using one of the highest priced processing oils to get speed and quality, but were not attaining their production and quality quota. The emulsion did not carry through with the result that the stock "heated" in the bins before reaching the combing operations.

The answer was found when a Sun Textile man — one of those Doctors of Industry — recommended Sunotex RS 420. Now applying two parts water to one part Sunotex RS 420 at the pickers . . . trouble has stopped. They're getting better wetting through of the emulsion. The tensile strength of the finished yarn is much greater. And final scouring is better. Yarn for Navy blankets is being made better and quicker thanks to the aid of Sunotex Oils.

This is another example, typical of what Sun Doctors of Industry have achieved in many textile plants. Their services and the products they have to offer for processing wool, rayon and Nylon . . . are yours to use to improve your production. Get in touch with your local Sun Textile man today . . . or write . . .

SUN OIL COMPANY · *Philadelphia*

Sponsors of the Sunoco News Voice of the Air — Lowell Thomas

SUNOCO

SUN PETROLEUM PRODUCTS *HELPING INDUSTRY HELP AMERICA*

Sure—you'd give him the shirt off your back

. . . but carders can help more by maintaining peak efficiency in the card room

Remember—as you press for production, it's your card clothing that takes the rap. So, the quality of your card clothing directly affects the efficiency of your operation.

TUFFER—made by our exclusive patented Tufferizing Process, is your guarantee of wires that are cut even in length and free from burrs; wires with accurately formed square crowns; wires spaced evenly and parallel set in the famous Tuffer foundation.

This adds up to Card Clothing quality—the kind that stays on the job longer—the kind that helps you maintain peak efficiency.

When you Replace
Replace with→ TUFFER CARD CLOTHING

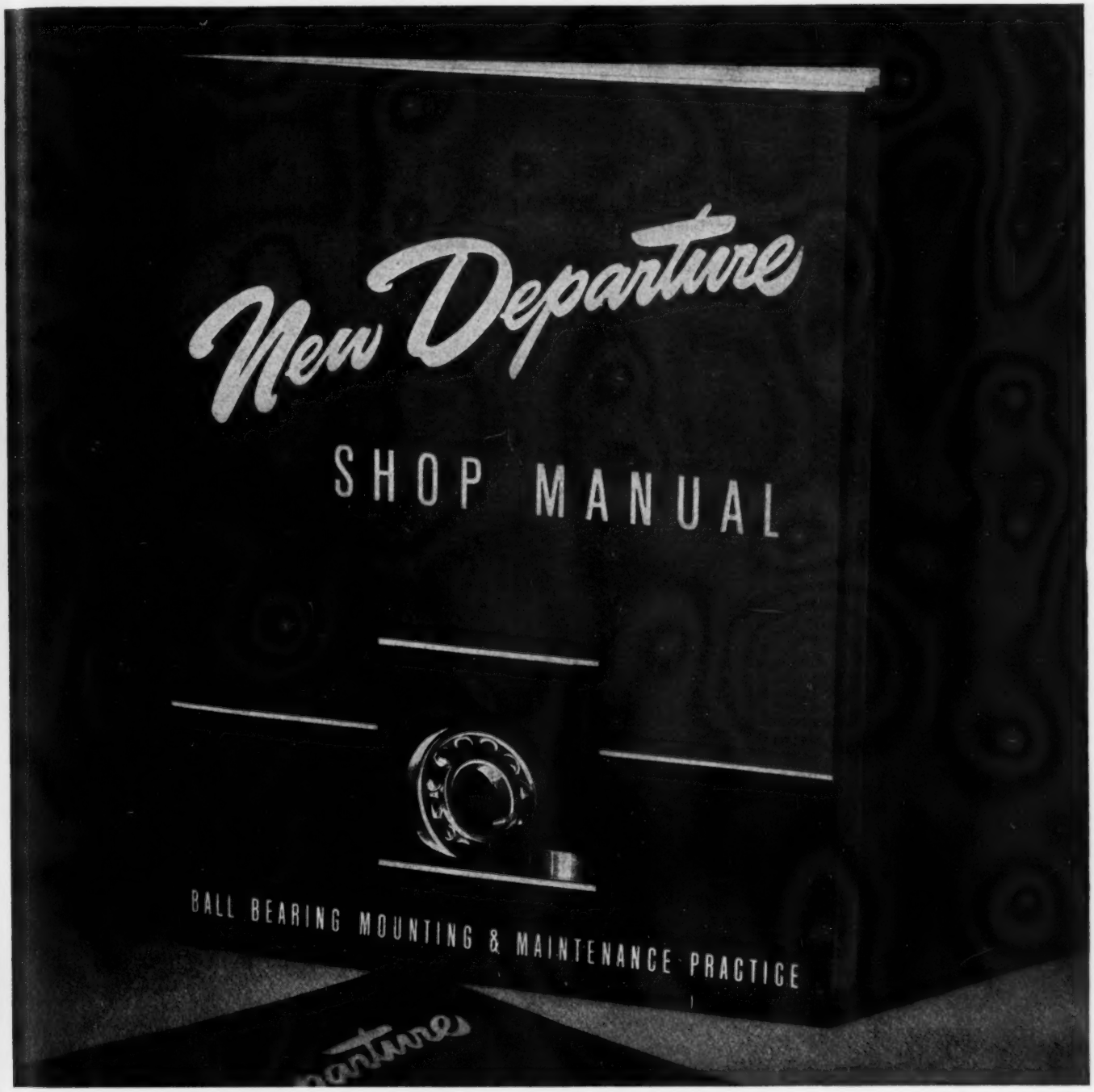
HOWARD BROS. MFG. CO.

WORCESTER, MASS.

Southern Plants . . . Atlanta, Ga., Gastonia, N. C.
Branch Offices . . . Philadelphia, Pa., Dallas, Texas
Canadian Agents . . Colwool Accessories, Ltd., Toronto 2

PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye and Regular Wire Heddles



How to keep 'em rolling . . .

While New Departure's vast productive facilities are giving war projects right of way, New Departure's technical staff has not forgotten its duty to its regular customers.

In fact, both old and new users of New Departure Ball Bearings will find extremely helpful this latest addition to the New Departure Engineering Library—the Shop Manual.

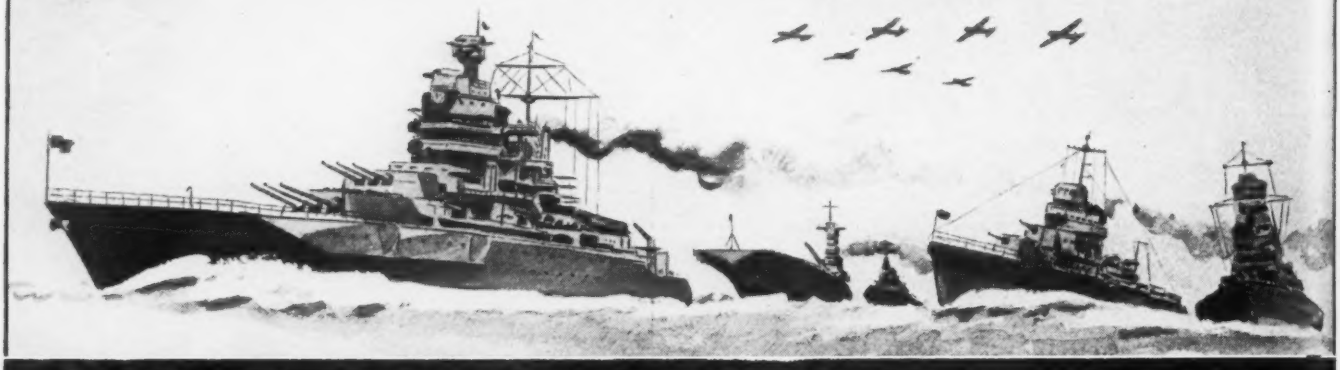
The New Departure Shop Manual should be read by every man responsible for the correct installation of ball bearings for maximum service and long life. Send for your copy and tell us how many additional copies would be required to supply your interested personnel. New Departure, Bristol, Connecticut.

NEW DEPARTURE BALL BEARINGS

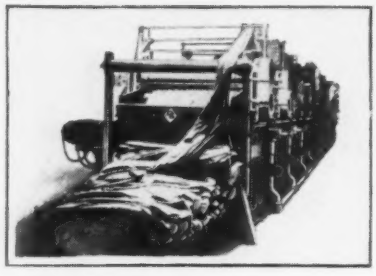
3148

The Fleet Line

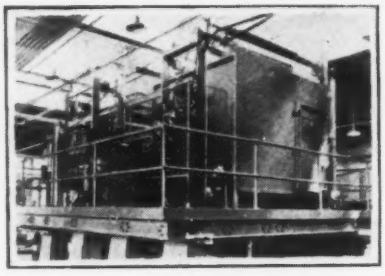
OF FINISHING EQUIPMENT



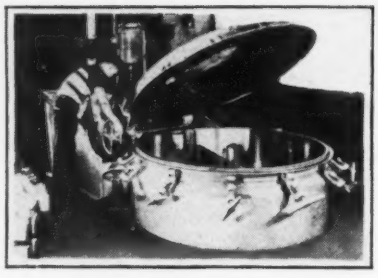
INCLUDE THESE MACHINES IN YOUR AFTER-THE-WAR PLANS



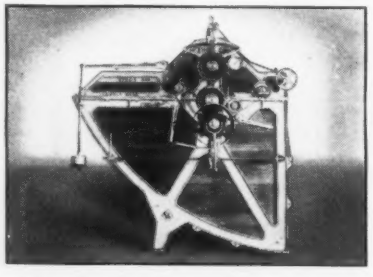
CONTINUOUS WASHER. First of its type to handle heavy, dirty fabrics as well as light ones. Production is 13 to 54 y.p.m. Automatic control. One operator.



DERBY DRY CLEANER. Cleans cloth direct from loom with non-inflammable solvent (recovered). Removes tar, paint, chalk and 99.8% oil (recovered and reused).

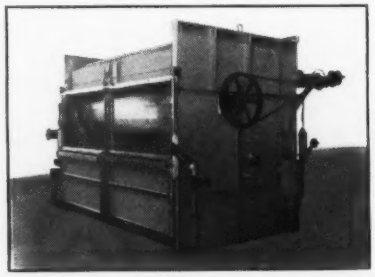


STOCK DYE KETTLE. Construction eliminates outside circulating pipes. Submerged pump requires no packing. Motor on top. Stock unloaded on false bottom.



FULLING MILL. Replaces 2 or 3 old mills and handles 2 to 14 pieces at once. Pays for itself in 3 years or less. Savings in soap, dead loss and labor. Uniform finish.

CARBONIZING RANGE. Includes wet out box, squeeze rolls, soaking tank, acid squeeze rolls, tenter dryer, baker, crusher, neutralizer. 17 to 20 Y.P.M. of 32 oz. 80″ fabric.



TLBT DYE KETTLE. Large drum reel, (partially knurled surface) virtually eliminates tangles, tie-ups, wrinkles, creases, streaks. Saves dyestuffs.

RIGGS AND LOMBARD

INCORPORATED

Foot of Suffolk Street, Lowell, Mass.

ALSO: Batch Washers • Dye Becks • Rope Soapers • Soaping Machines • Pusher Mills • Soap Distributing Systems • Bleach Tubs • Top Dyeing Machines • Yarn Steamers.

Flood casualty YESTERDAY

OK'd for Service on the Production Front Today

FLASH FLOODS "SOMEWHERE IN U.S.A." 48 TONS OF ELECTRICAL EQUIPMENT WATER-SOAKED, UNFIT FOR SERVICE. RUSHED TO WESTINGHOUSE MANUFACTURING & REPAIR PLANTS, DRIED IN ELECTRIC OVENS, RECONDITIONED, INSPECTED, TESTED...WITHIN 24 HOURS MANY OK'd MOTORS WERE ON THE RETURN TRIP—WITHIN 10 DAYS ALL EQUIPMENT RESTORED TO SERVICE.

Westinghouse
MANUFACTURING AND REPAIR

J-90462

IF **THE EQUIPMENT NEEDING REPAIR IS VITAL TO THE WAR EFFORT . . . PHONE THE NEAREST OFFICE OF WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY FOR**

EMERGENCY SERVICE

93 M & R PLANTS . . . ONE NEAR YOU!

Finnell FLOOR FINISHES and CLEANSERS

. . . Save on Materials, Maintenance, and Man-Power!

Finnell Waxes and Sealers not only serve the important purpose of making floors last, but. due to the long-wearing quality of *Finnell* Finishes, they aid conservation further by requiring less frequent application . . . thus conserving materials and labor. And because of the fast cleansing action of *Finnell* Cleansers, they also effect savings in materials and labor.

Finnell Finishes include: *Fino-Gloss Liquid Floor Wax*, containing genuine wear-resisting Carnauba Wax. Requires no polishing or buffing. Several types, including Concentrated *Fino-Gloss* (saves vital containers as well as shipping weight and space) and Special Non-Skid and Waterproof Types. . . . *Finnell-Kote*, the solid wax that's applied hot and sets in less than 10 seconds! . . . *Finnell Liquid Kote*. . . . *Finnell Paste Wax*. . . . *Finnell Liquid Wax*. . . . *Gloss Seal* (several types). . . . *Traffic Seal*. . . . *Finnell Fulfil*, an oil filler and sealer.

Finnell Cleansers include: *Finola*, the Original Scouring Powder, for heavy duty scrubbing. . . . *Century Scouring Powder*, a mild abrasive cleanser. . . . *Solarbrite*, anhydrous soap solution. . . . *Finnell Rubber Cleaner*. . . . *Sanax Wax Cleaner*.

For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1903 East Street, Elkhart, Indiana.

TO PROLONG THE LIFE OF YOUR *Finnell* EQUIPMENT

. . . we have prepared helpful information for you. Ask for Bulletin 1903.

★ *Save to Save America*—Buy More U. S. War Bonds!

FINNELL SYSTEM, INC.

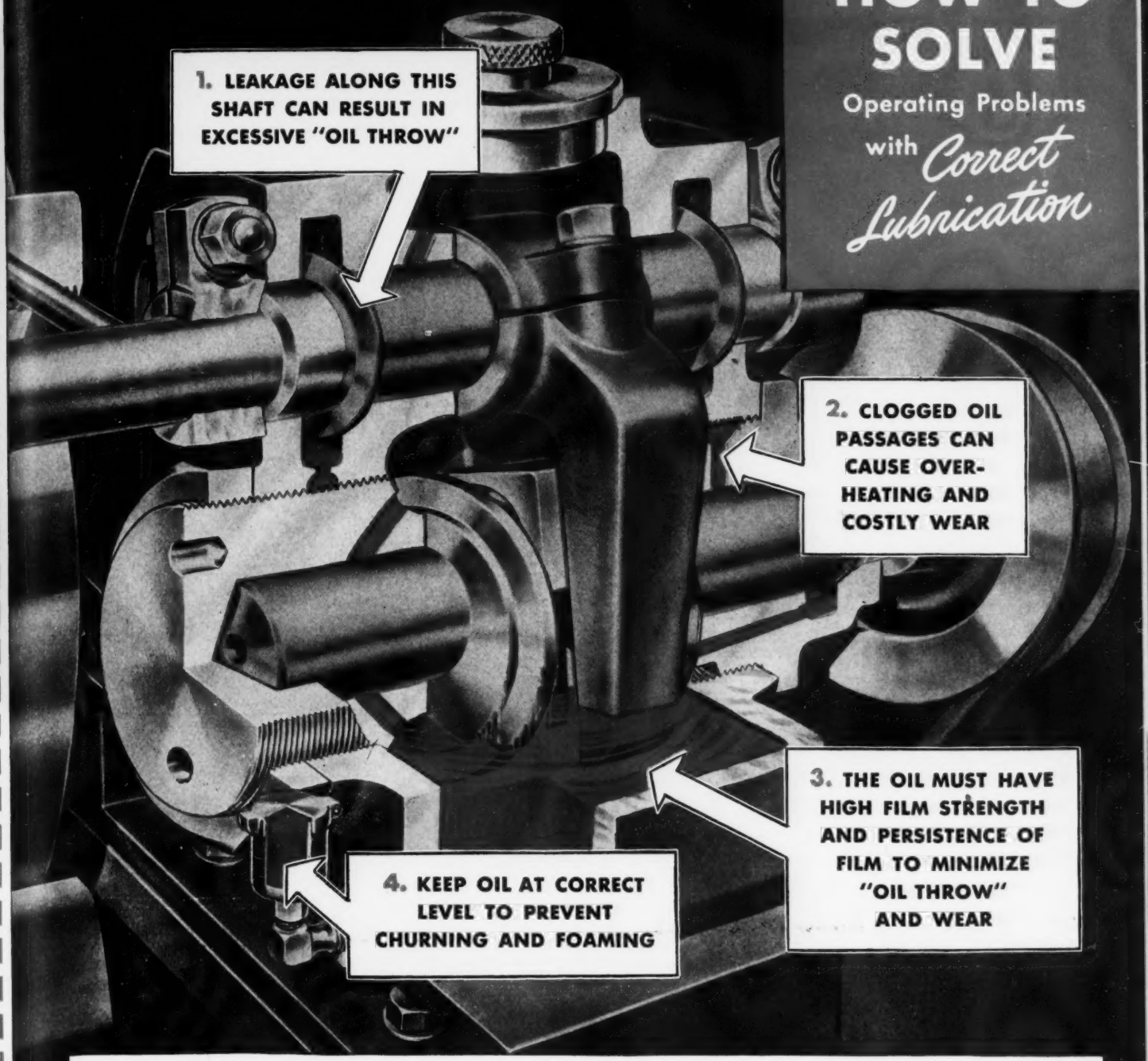
Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

HOW TO SOLVE

Operating Problems with *Correct Lubrication*


1. LEAKAGE ALONG THIS SHAFT CAN RESULT IN EXCESSIVE "OIL THROW"
2. CLOGGED OIL PASSAGES CAN CAUSE OVER-HEATING AND COSTLY WEAR
3. THE OIL MUST HAVE HIGH FILM STRENGTH AND PERSISTENCE OF FILM TO MINIMIZE "OIL THROW" AND WEAR
4. KEEP OIL AT CORRECT LEVEL TO PREVENT CHURNING AND FOAMING

End Comb Box Trouble

PROBLEM: Excessive heating and leakage are the chief comb box lubrication "troubles." They result in "oil throw" and staining of yarn. Heating can be due to unsuitable lubricant, clogged oil passages or high oil level which causes excessive churning. Leakage can result from wear, improper setting, excessive foaming or incorrect venting of the box.

ANSWER: Use an oil specially designed for this type of problem, and be sure the oil is kept at the right level.

You'll find Gargoyle Vactra Oil is ideal for this application. Its high film strength and persistence of film help minimize wear and "oil throw." It will not leave clogging deposits in oil passages. The Socony-Vacuum man will gladly advise on correct oil level.

GARGOYLE Lubricants

SOCONY-VACUUM OIL COMPANY, INC. — Standard Oil of N. Y. Div. • White Star Div. • Lubrite Div. • Chicago Div. White Eagle Div. • Wadhams Div. • Southeastern Div. (Baltimore) • Magnolia Petroleum Co. • General Petroleum Corp.

CALL IN SOCONY-VACUUM

A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

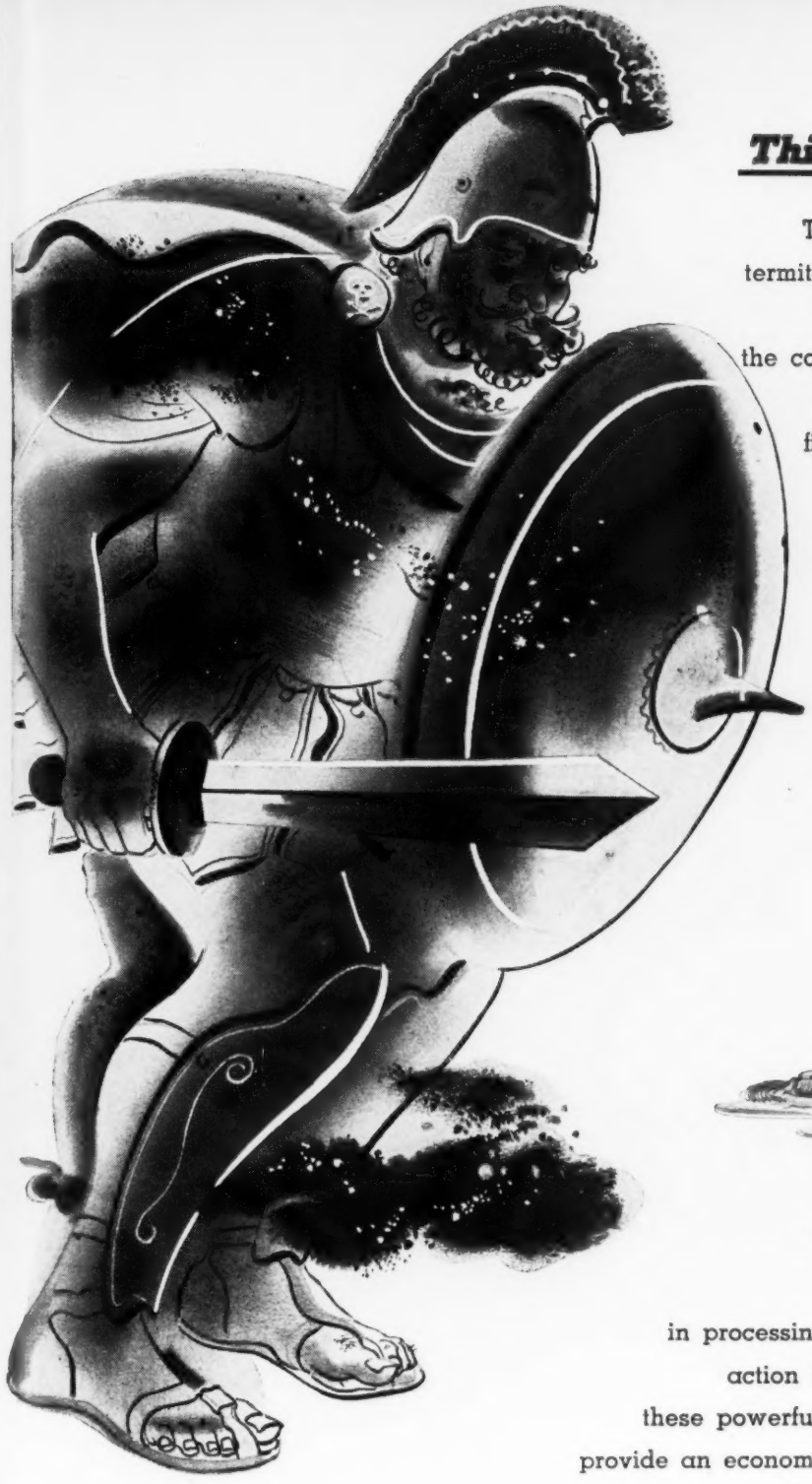
— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles ?

Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.



This War Will Last Forever

The war against mold, decay, germs and termites is your daily business. It is important business—business that doesn't wait—for the cost in both time and materials runs high. To help in this endless industrial fight against fungi and bacteria, Dow has developed a series of 17 chlorinated phenolic derivatives—the *Dowicides*. These products have proved their value in many fields—paper, leather, paint, lumber, textile, and many more.

Dowicides are employed in finishing compositions and in processing operations. In all cases, the inhibiting action is thorough and dependable. Investigate these powerful germicides and fungicides today. They provide an economical and effective way to improve manufacturing operations and make vital materials last longer.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN
New York • St. Louis • Chicago • Houston • San Francisco
Los Angeles • Seattle

IN THE TEXTILE FIELD Dowicide fungicides offer protection against mildew and fungus growths. Incorporated in compositions for finishing, it provides an effective inhibiting action under widely varying atmospheric conditions—from arctic to tropical. This means longer life for army duck and other canvas. Write for full details.

DOWICIDE

GERMICIDES AND FUNGICIDES

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

SCIENTIFICALLY ENGINEERED
FOR EVERY INDUSTRIAL USE

TYCOL

FIRE

This is #2 of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.

T I D E W A T E R L U B R I C A N I A

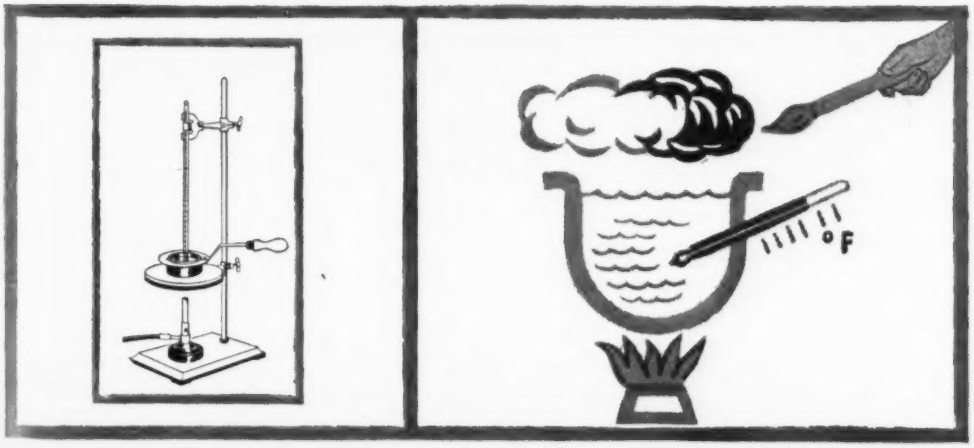
DEFINITION: That temperature at which a lubricating oil will first give off sufficient vapors to ignite when approached by a small flame or spark is termed the flash point—the lowest temperature at which when ignited, the oil continues to burn is called the fire point.

TEST: The flash point and the fire point of lubricating oil are usually determined by means of the Cleveland Open Cut Tester by following a definitely prescribed procedure. The oil under test is heated and a small pilot flame is moved over the cup with every 5°F rise in oil temperature. The first time a flash occurs on the surface of the oil, the temperature of the oil is recorded as the flash point. If the oil is heated still further and tested with the pilot flame, it will commence to burn with a continuous flame. When this occurs the oil temperature is recorded as the fire point.

For most purposes knowledge of the Flash Point alone is sufficient. It indicates the ordinary fire hazard in handling petroleum fuels and similar volatile products. With lubricating oils, Flash Points sufficiently high to avoid undue evaporation losses in service are definitely required.

The following illustrates examples of flash points of typical petroleum products, fire points being somewhat higher:

Gasoline .....below 0°F	Kerosene .....115-150°F
Cleaning Naptha ....110-115°F	Light Machine Oil....325-400°F
	Heavy Cylinder Oil..525-625°F



Tycol lubricants are subject to rigid flash point control during manufacture. Uniformly correct flash points, insuring undiluted products in every grade, are one of many Tycol characteristics contributing to high quality.

TIDE WATER ASSOCIATED OIL COMPANY

Eastern Division: 17 Battery Place, New York • *Principal Branch Offices:* Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL

INDUSTRIAL LUBRICANTS

RAYON REPORTS

Presented monthly by American Viscose Corporation, New York, N. Y. MARCH, 19

TRADE GOODS—Quantities of rayon fabrics have been purchased by the United States Army Quartermaster Corps for use as trade goods by the army of occupation in North Africa. This may not seem important to a civilian, but to military men on the spot it means plenty. Money means little to many primitive peoples. Cloth, offered in payment, can get a temporary airfield built. It can get assistance for aircraft crews forced down in the desert. It can get other tasks performed. It can build terrific good will when good will is needed most of all. In this role, rayon is doing an extra fine job in helping to bring victory.

CAKE DIRECTIONS—Rayon in cake form, instead of cones or skeins, is being used in ever increasing poundage. The reason for this is that by delivering rayon in

cake form, the manufacturer can deliver a better quality yarn at a lower cost. In addition, cakes are convenient to handle, and can be handled with good efficiency and low waste figures. But some textile manufacturers are still hesitant about using cakes because they are unfamiliar with the method of handling them. In order to assist all rayon users with the technique, we have prepared a fairly comprehensive article which gives the details. This article was published in *Daily News Record*, and reprints are available. Whether you are using cakes or not, you might find it interesting. It's free upon request.

STOCKING NOTE—Stores report that our booklet, "*How to Get the Most From Your Rayon Stockings*," has been helpful in teaching consumers how to care for their new rayon hosiery, and has also been of real value in reducing the number of complaints and returns. An Iowa department store estimates that, by putting one of the booklets in with each pair of stockings, it has cut its complaints about 75 per cent. Distribution of the booklet to date has amounted to approximately 2,500,000 copies.

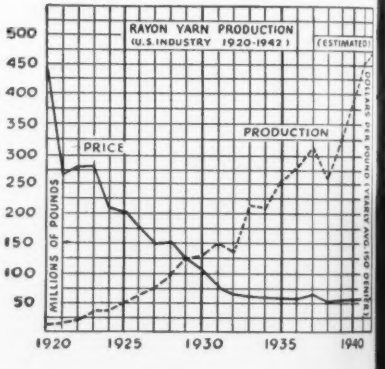
A "SQUARE" MEAL FOR A HUNGRY SOLDIER

DRY STORY—At our Marcus Hook plant, we had some rayon yarn dryers not in use. By getting together with the War Production Board and Stokely Brothers & Co., food canners, we put the dryers to work—at dehydrating *vegetables*. The Marcus Hook equipment will add materially to the country's food dehydration facilities. This contributes to the war effort, since dehydration results in the saving of shipping space used for foodstuffs for our Allies and the fighting services. Needless to say, the dehydrating work that will be done at the plant will not interfere with the production, quality or characteristics of the rayon yarn it produces, nor will the manufacture of rayon have any effect on the vegetables being dehydrated.

"KNOW HOW" ON VAT DYEING—The use of vat colors in the dyeing of viscose rayons has shown a steady growth in recent years. Today, the purchasing public is highly color-conscious and is demanding fast colors, regardless of the nature of the fabric. If you missed reading the article on vat dyeing by one of the members of our organization which appeared in *Rayon Textile Monthly*, write us for a reprint. It gives a brief summary of methods which you might find valuable.

NEW VISCOSE PUBLICATION

We've just started publishing what w think is an important magazine. It's calle "Ricochet," and it's sent to all of our ab sentee employees in the armed forces. gives the boys news of their comrades o the home front. We mention it because w think other companies might like to follo suit, if they are not sending such news le ters now.



MART CHART—Look at the chart abov to see how rayon yarn price and produc tion trended in the period from 19 through 1942. From a high of more tha $4.50 a pound in 1920, the price of 1 denier rayon has been reduced to its pre ent level of 55c a pound. In the same p riod, United States production of rayo rose from 10,125,000 pounds in 1920 to estimated 470,000,000 pounds in 1942. Ju another example of the American way life and how it operates to produce mo things for more people.

*Reg. U. S. Pat. Off. Copr. 1943—American Viscose Co

4-PLY SERVICE...

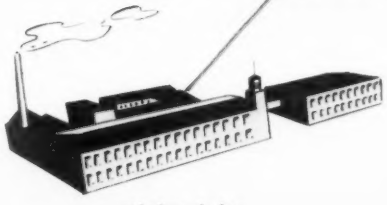
Fiber research helps you get the right yarns; *fabric development* helps you design new fabrics; *The Textile Unit* helps you solve mill problems; and CROWN Tested gives you scientific performance facts on finished fabrics containing CROWN Rayon—are all part of our 4-PLY SERVICE. All are designed to help you make the best possible use of the available yarns and fibers. Make use of the 4-PLY SERVICE!

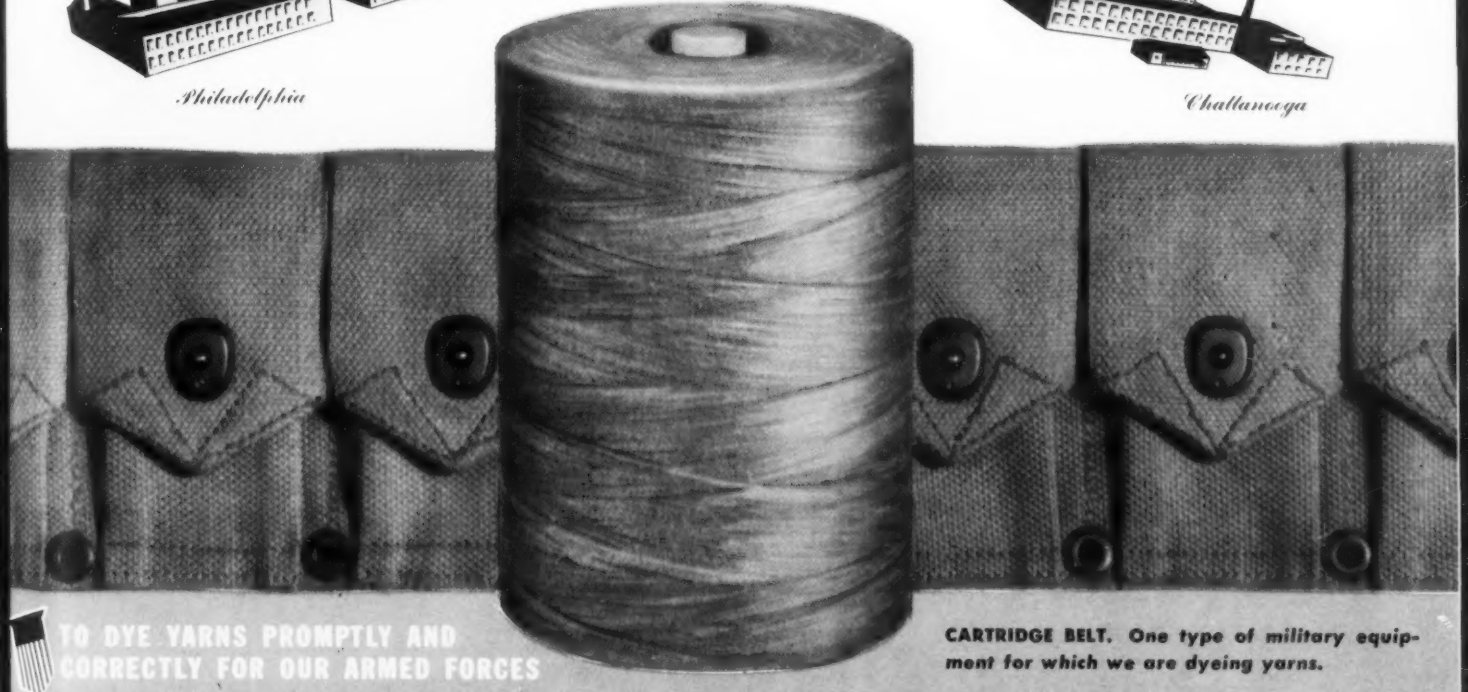
AMERICAN VISCOSE CORPORATION

Producers of CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.
Plants: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

4 PLANTS WITH 1 PURPOSE





CARTRIDGE BELT. *One type of military equipment for which we are dyeing yarns.*

TO DYE YARNS PROMPTLY AND CORRECTLY FOR OUR ARMED FORCES

PROMPT SERVICE. Send your order to our nearest plant. Probably this plant can give you reasonably prompt service, but if not, your order will be transferred to one of our other plants which is not so busy. Thus there will be no unnecessary delay.

QUALITY. In whichever plant the work is done the quality will be uniform, because the same formula will be used and the same method . . . Franklin Process Package Dyeing. For thorough, level penetration of color this method is unsurpassed . . . probably unequalled. In the present emergency it has "proved its mettle" by successfully dyeing 8/4 and other multiply yarns with vat colors for military webbing . . . a job that has proved a stumbling block for more than one dyer. May we help you to help Uncle Sam?

FRANKLIN PROCESS • *Package Yarn Dyers and Colored Yarns* • Providence, Philadelphia, Greenville, Chattanooga; New York Rep., 40 Worth St.; Chicago Rep., 100 W. Monroe St.

★ ★ ★

CIVILIAN WORK. Yarn dyeing for the Victory Program naturally takes precedence in all our plants. However, our total capacity is not always required for Victory orders, so that we can accept a limited amount of civilian business.

Franklin Process

★ LARGEST PACKAGE DYERS IN THE WORLD

THE TEAM WITH THE MOST RESERVES USUALLY WINS!

Likewise mills that use Ashworth Card Clothing have good production records, for Ashworth has—

3 FACTORIES which assure an uninterrupted supply of card clothing. If one factory is temporarily disabled, another factory can "pinch-hit" for it.

6 REPAIR SHOPS which facilitate convenient and prompt repairs and which again insure you against emergencies.

7 DISTRIBUTING POINTS which speed up deliveries of those items we have in stock and facilitate personal contacts when the mill has card clothing problems.

Mills also find Ashworth Products dependable, for we are "Pioneers in Card Clothing".

ASHWORTH BROTHERS, INC.
***Woolen Div.*, AMERICAN CARD CLOTHING CO.**

Fall River*†‡ Worcester*‡ Philadelphia*†‡ Charlotte‡ Greenville‡ Atlanta†‡ Dallas†‡ (Textile Supply Co.)

**Factory †Repair Shop ‡Distributing Point*

ASHWORTH PIONEERS IN CARD CLOTHING

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

WHAT DO YOU WANT IN A *Long Draft Apron?*

One that WON'T STRETCH? Accotex Aprons are reinforced with a sturdy interliner . . . assuring no loss of efficiency due to stretching during operation.

One that is SEAMLESS? Accotex Aprons have no troublesome seams to break open and shorten life.

One that is UNIFORM? All Accotex Aprons are identical in composition, and the dimensions of every size are accurate. Thus, barring unusual mill accidents, each apron will give consistently good service for the same length of time.

One that is CLEAN RUNNING? Accotex Aprons give you cleaner running work, reduce waste to a minimum . . . because they don't scuff or crack during operation.

One that REDUCES LAPPING? Accotex Aprons are not affected by changes in temperature or humidity. Hence they perform with a minimum of lapping under all mill conditions.

One that has GOOD FRICTION? The good gripping action of Accotex Aprons keeps slippage at a minimum. Thus you get maximum production of high quality yarn.

Yes, Armstrong's Accotex Aprons meet every requirement for efficient service. That's because they were perfected through years of research, testing, and field checking. These aprons are made of a nonoxidizing, highly oil-resistant compound developed specifically for textile use. Accotex Aprons are spinning better yarn . . . giving mill operators a convincing demonstration of Accotex superiority over old-type aprons.

You can get prompt delivery of Accotex Aprons. See your Armstrong representative right away for full details. Or write Armstrong Cork Company, Textile Products Section, 8303 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX APRONS

CORK COTS • ACCOTEX COTS

NOBODY ever wore a piece of yarn — or just wrapped a length of cloth around her body. Yarn has to be made into something — so does cloth. Then it becomes something useable, wearable, buyable and sellable.

You and your company are performing one or the other of these functions. We are simply suppliers of the materials. So isn't it only good sense, as well as good business, for us to "look over your shoulder" and see what problems *you* have?

If rayon yarn hadn't given some trouble in not being absolutely uniform—if knots and broken filaments hadn't slowed production, created "seconds", cost money, probably our "Continuous Process" would never have come along. It took us seven long years and millions of dollars to produce it—a yarn made "continuously", as a single thread, untouched by human hands from spinning to twisting. That yarn is a revelation in uniformity, and knots and broken filaments are virtually absent.

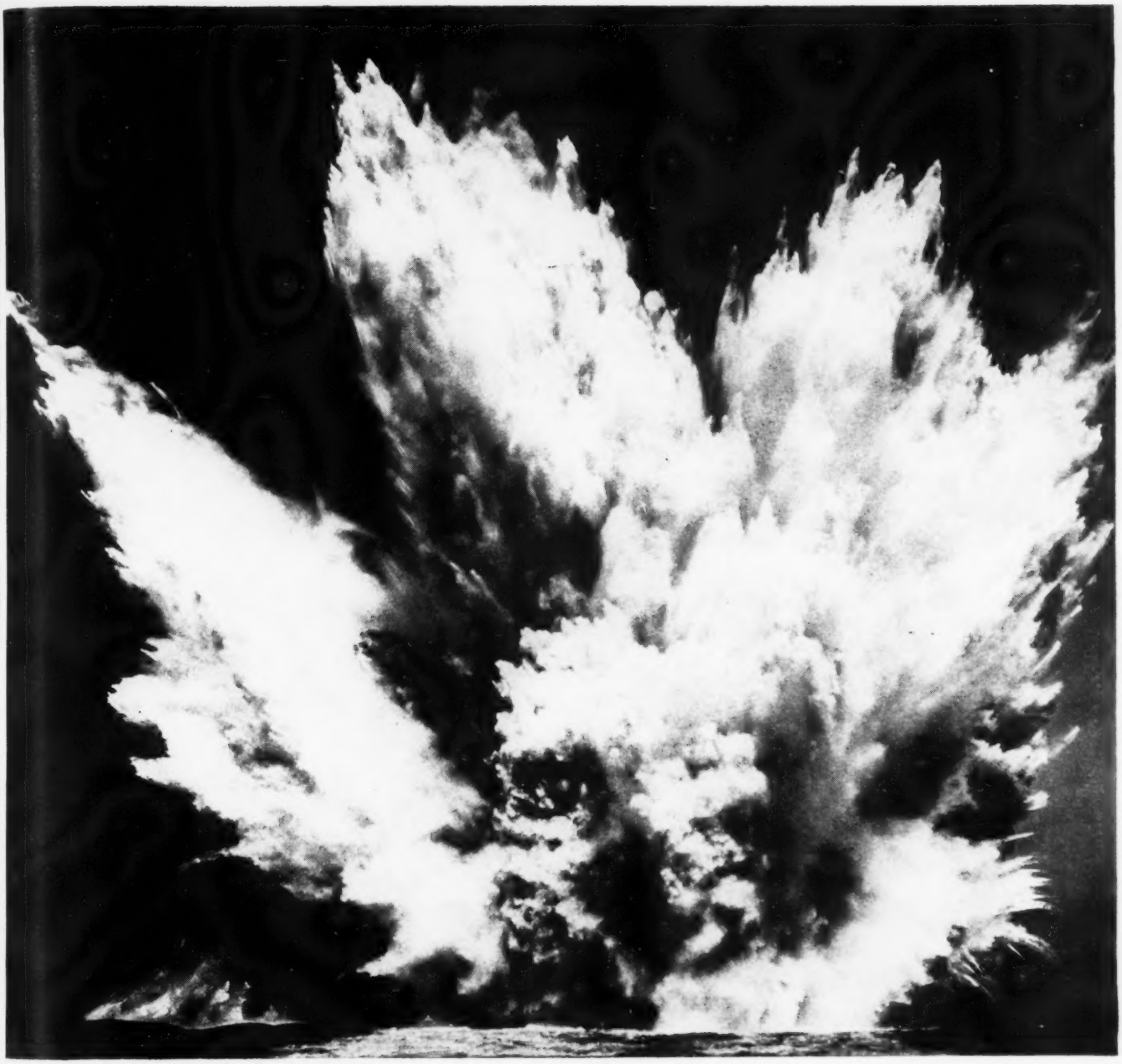
Or take underwear. If we hadn't seen that early rayon underwear cloth was on the sleazy side, poor in wear, unsatisfactory to wash, probably Spun-lo Knit Cloth would not have come along—an underwear fabric, just as uniform yard by yard as "Continuous Process" yarn is, pound by pound. And undies from it feel right, handle well, are dainty and, at the same time, wear like iron, and wash as simply as a handkerchief.

We think it has paid dividends for Industrial to know you and your problems. For one thing, it has made a product of Industrial mean "something better" to everyone all along the line—and that means sales and satisfied customers for you as well as for us.

"MIND IF WE LOOK OVER YOUR SHOULDER?"

Industrial RAYON CORPORATION

CLEVELAND, OHIO
New York Office, 500 Fifth Ave.



Air Conditioning gives it OOMPH!

This war is being fought with *explosions*. All kinds... from block-busters to hand grenades. And don't forget the explosions in the barrels of guns that propel bullets and shells toward the enemy.

It takes a lot of skill to make a good explosion. Air conditioning helps.

The rate at which powder *dries* determines the way it explodes. It must not explode too soon or too late. Hence, special air conditioning . . . with temperature and humidity controlled precisely . . . is used for the drying of powder.

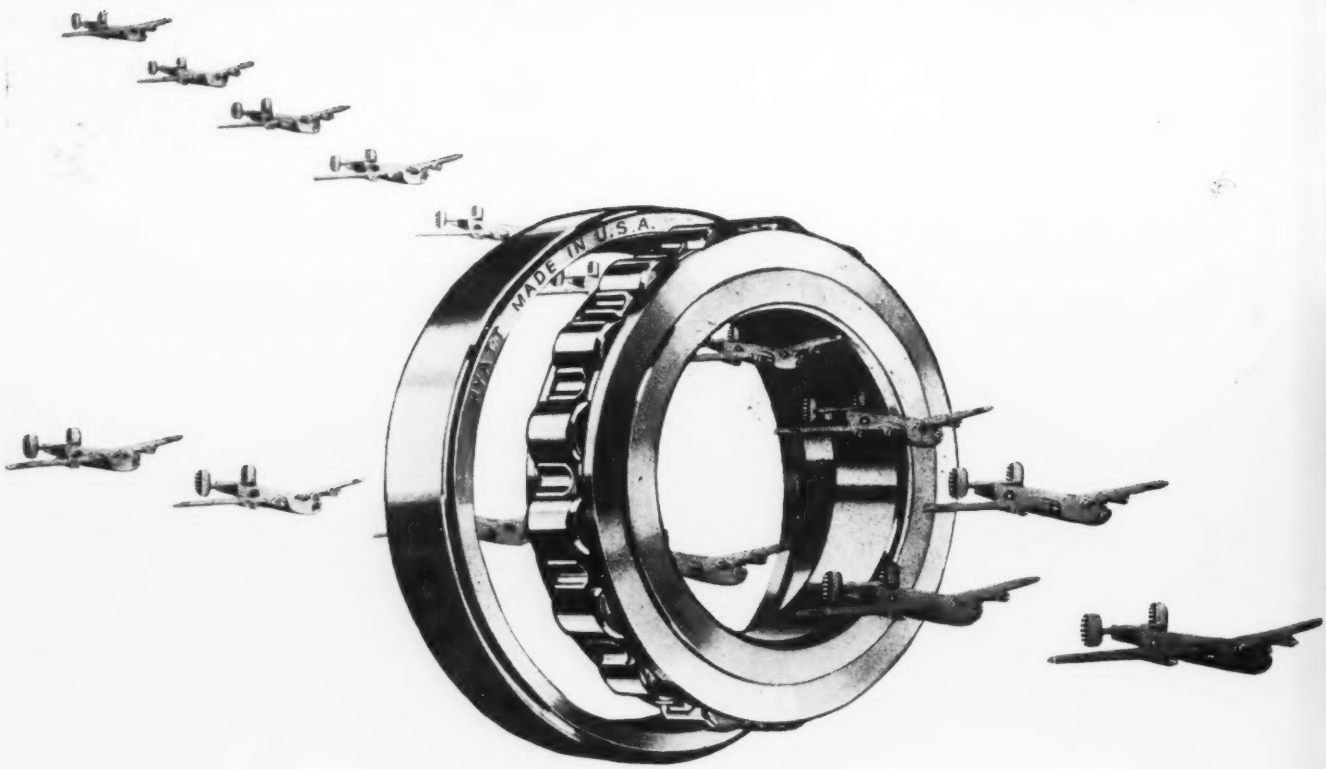
Also, air conditioning protects the lives of workers in munitions plants by providing the safest temperature and humidity conditions.

General Electric is an outstanding supplier of the new improved kind of air conditioning equipment needed for these wartime requirements. It has developed equipment more flexible, more compact than ever before . . . with more accurate temperature and humidity control.

Today this equipment is being devoted to winning the war. After the war, a far better air conditioning will be made available for offices and factories, stores and theatres; homes, hospitals and hotels . . . from General Electric.

Air Conditioning and Commercial Refrigeration Department, Division 433, General Electric Co., Bloomfield, N. J.

Air Conditioning by **GENERAL ELECTRIC**



High Precision

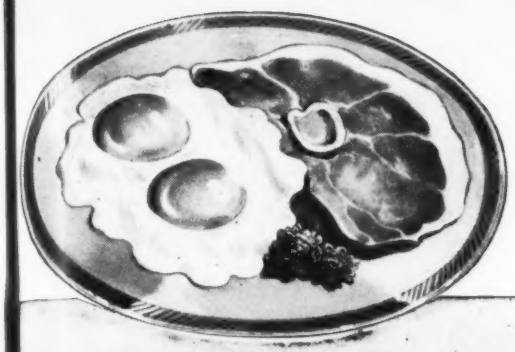
Aviation is but one of the many important applications where Hyatt Roller Bearings are battling the Axis.

Their proved performance under fire in aircraft as well as in tanks, guns, ships and trucks . . . their wartime round-the-clock operation in factories, on farms and railways . . . all reflect the many important advantages of their advanced design and high precision manufacture.

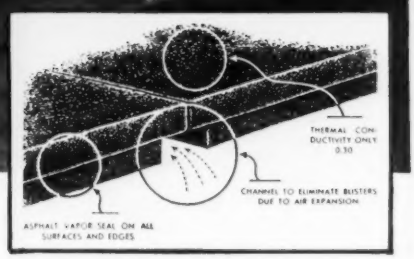
This is the kind of bearing precision and performance which you have learned to associate with Hyatts in textile machinery applications over the many years we've served, and will continue to serve, in the brighter years ahead.

Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS



THEY BELONG TOGETHER —LIKE HAM AND EGGS


THERMAL CONDUCTIVITY ONLY 0.30
CHANNEL TO ELIMINATE BLISTERS DUE TO AIR EXPANSION
ASPHALT VAPOR SEAL ON ALL SURFACES AND EDGES

CELOTEX BUILT-UP ROOFING and CELOTEX VAPOR-SEAL ROOF INSULATION meet exacting needs of textile plants

CENTRALIZED responsibility avoids "buck-passing." When your roof insulation and built-up roof are both the products of the same reliable manufacturer, you avoid possibilities which make for trouble. That's why so many big plants use Celotex Vapor-seal Roof Insulation together with Celotex Built-Up Roofs.

Celotex Bonded Built-Up Roofs are available with ten, fifteen, or twenty-year bond. Celotex Vapor-seal Roof Insulation offers a thermal conductivity of 0.30, offset edges all around each board that build channels which eliminate trapped air, reduce possibilities of roof buckling and blistering.

Write for complete information, specifications, and samples—or consult your roofing contractor.

CELOTEX
REG. U. S. PAT. OFF.
BUILDING PRODUCTS

Vapor-Seal Roof Insulation Bonded Built-Up Roofs

THE CELOTEX CORPORATION • CHICAGO

THE CELOTEX CORPORATION TW 3-43
Chicago, Illinois

Please send complete information on Celotex Vapor-seal Roof Insulation and Built-Up Roofing.

Name .....

Address .....

City .....

County ..... *State* .....

Keep 'em Spinning on to Victory

Increase Yardage . . . Cut Costs With Precision-Perfect Lubrication!

Today—when Uncle Sam is calling on you to deliver the "goods" in greater quantities than ever before—delays and breakdowns are costly, not only to you but to the Nation!

Insure against these bottlenecks with tough, long-lasting Cities Service lubricants!

Whether your work calls for one or many types of lubricants—Cities Service is ready to serve you with correct top-quality products and expert engineering counsel.

Get in touch with a Cities Service lubrication specialist now and find out how much you can gain by using quality lubricants specifically designed for your machine. There is no obligation, of course!

OIL IS AMMUNITION—USE IT WISELY!

CITIES SERVICE OIL COMPANY
NEW YORK · CHICAGO

IN THE SOUTH
ARKANSAS FUEL OIL COMPANY
SHREVEPORT, LA.

BLENDS or BULLETS
must have balance

Accurate machine gun fire depends on an accurately balanced bullet . . . that's why certain munitions makers are turning to **bullet core-tips of Tenite**, the Eastman plastic made from the same pure cellulose acetate as Eastman acetate rayon. Tenite is tough, lightweight and dependable for uniformity.

Blended fabrics, too, depend on fine balance. And **Teca**, Eastman crimped acetate rayon, helps to build a "balanced" weave . . . gives it worsted-like texture and drape . . . spins in lively resistance to wrinkles . . . acts to reduce shrinking or stretching.

Eastman

CRIMPED ACETATE RAYON

A. M. TENNEY ASSOCIATES, Inc., 10 East 40th St., New York, sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of Eastman Kodak Company.

BEARINGS OR BULLETS

Today, more than ever before, man-hours are the dominating factor whether in the manufacture of bearings or bullets. Therefore, by making bearings last longer more man-hours can be applied to production of bullets—and that's important these days.

BALL BEARING LUBRIPLATE will, by virtue of its outstanding lubrication and protection features, make your ball and roller bearings last longer. LUBRIPLATE is different from any lubricant you ever used. It possesses characteristics not to be found in ordinary lubricants.

Just think what it would mean to you if you could double or treble the life of your anti-friction bearings—reduce replacement bearing and labor costs—avoid unnecessary production interruptions. That is exactly what scores of manufacturers are accomplishing with BALL BEARING LUBRIPLATE.

Your investment in ball and roller bearings is certainly great enough to warrant your investigation of BALL BEARING LUBRIPLATE. Write today for your free copy of "THE LUBRIPLATE FILM" No. 1-43 containing valuable information on the lubrication and care of ball and roller bearings.

LUBRIPLATE DIVISION
FISKE BROTHERS REFINING COMPANY
NEWARK, N. J. **SINCE 1870** TOLEDO, O.
WRITE FOR THE NAME OF THE DEALER NEAR YOU

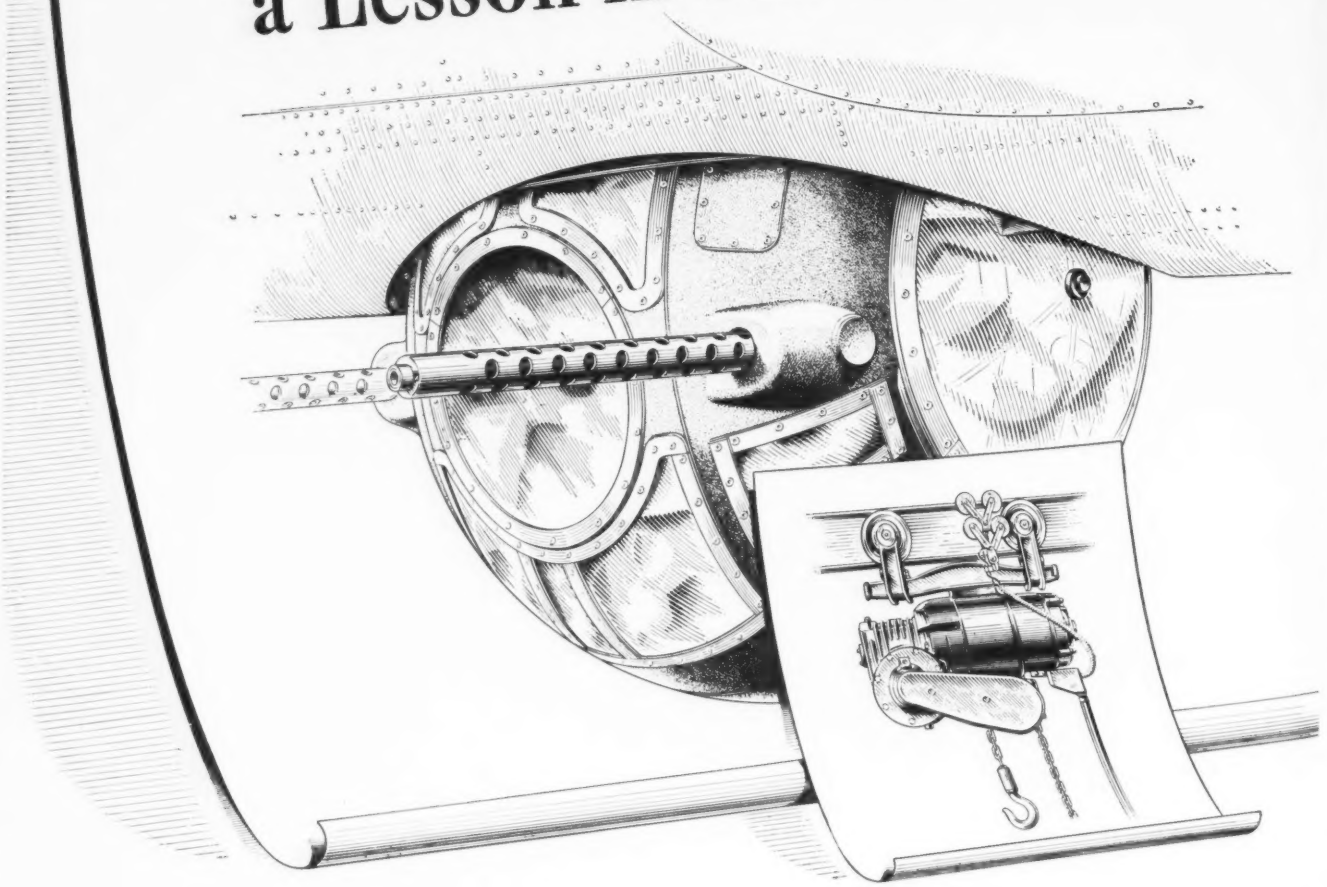
Alert to her responsibilities in time of war, the modern woman is also alert to the necessity of *quality* in the garments she buys. Good needles are doubly important today in knitting. They not only serve to maintain high standards of quality —they also help to conserve yarn. Torrington Needles are *machine* manufactured to assure extra fine temper, smooth finish and accurate dimensions. Their uniformity is a factor you should consider in keeping your knitting standards high.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington Conn., U.S.A., Established 1866

Branches: NewYork • Philadelphia • Chicago • Greensboro, N.C. • Boston • St. Louis • Toronto, Canada

The Plane Turret Found a Lesson in The Electric Hoist



THERE'S not much in common, perhaps, between a hoist and a bomber turret. The hoist works day and night—constantly starting and stopping, frequently overloaded, seldom lubricated. That's why hoist manufacturers turned to the Torrington Needle Bearing to make product performance more dependable.

The plane turret, on the other hand, performs its task in a single, short, action-crowded interval, followed by thorough overhauling. But in those few swift moments of aerial combat, there's no leeway for the failure of *any* part. So turret designers, too, selected the Needle Bearing, to give reliable performance—and many other needed features as well. Quick response, for example, as the gunner pivots and somersaults to keep an enemy fighter in his sights—that comes from the Needle Bearing's low starting friction. A few more inches of space in the turret's cramped quarters, made possible by the bearing's small size. More rounds of ammunition or more gallons of fuel on board—result of the bearing's weight-saving features. And faster turret production because of the bearing's ready availability.

WHEN YOU DESIGN YOUR POST-WAR PRODUCTS, there may be a hint for you in a bearing as versatile as this. Long life, high load capacity, faster speeds, compact design, less need of attention—aren't these just the features your customers will be looking for? Torrington engineers will show you how you can give your product these advantages with the Needle Bearing. For preliminary information on sizes and ratings, and for a list of many typical applications, write for Catalog No. 116.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Connecticut, U. S. A.

Makers of Needle and Ball Bearings

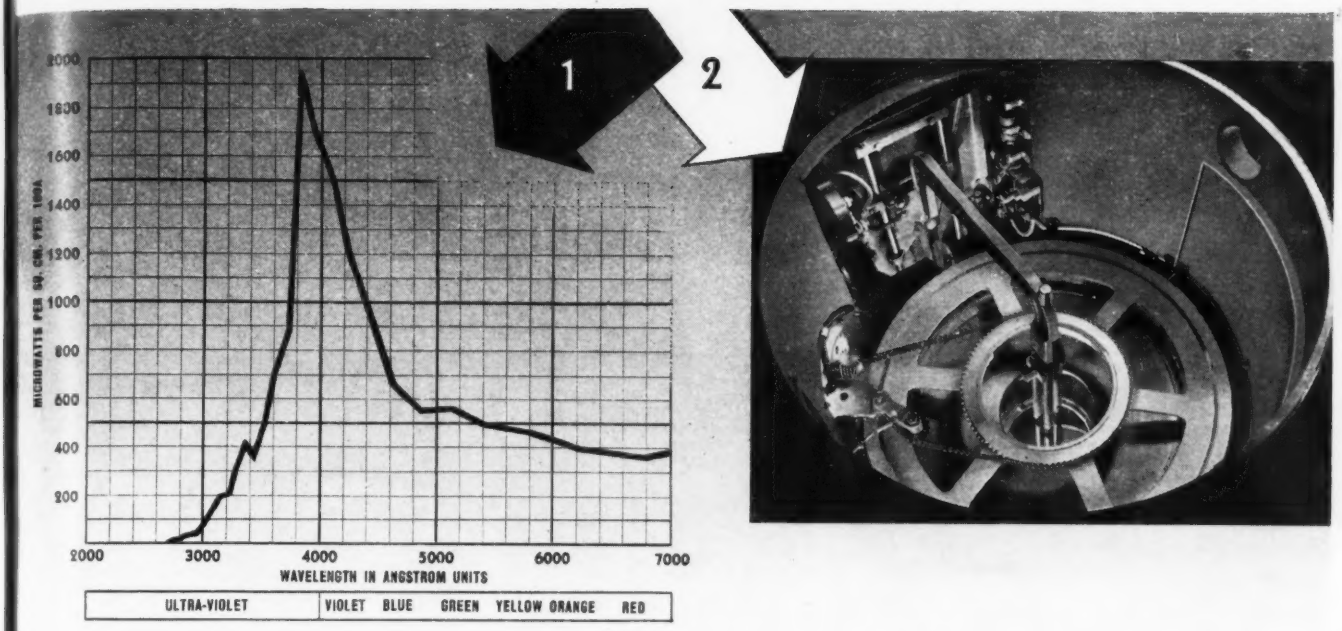
New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

LET'S GO! U.S.A. KEEP 'EM FLYING!

TORRINGTON NEEDLE BEARINGS

KEYED TO TODAY'S NEEDS

AND TOMORROW'S TRENDS



Two of Many Reasons Why

The National Type XV Unit is in Demand for Accelerated Fading of Dyed Fabrics . . .

TRADE-MARK

1 TYPE OF LIGHT SOURCE. This accelerated fading machine utilizes the flame type carbon arc burning "National" *Sunshine* carbons. This arc provides radiation recognized as the closest approach to the full spectrum of natural sunlight available from any light source of suitable intensity. The spectral energy distribution curve above shows the similarity of radiation from this arc to natural sunlight, especially in those regions of the spectrum most important in the fading of colored materials.

2 METHOD OF MAINTAINING LIGHT INTENSITY. Arc wattage, upon which quality and uniformity of radiation depend, is closely regulated in the XV unit by the most accurate method of arc control. This consists of a mechanism built around a reversible motor governed by a solenoid operated relay. Deviation from the selected current value is never more than a fraction of one ampere. This type of arc control is used on carbon arc lamps designed for the most exacting constancy of energy output, such as therapeutic applications, irradiation for production of Vitamin D and others.

SCIENTIFICALLY DESIGNED TO PERFORM THESE 4 FUNCTIONS

1. To duplicate the fading effects produced by exposure to natural sunlight. 2. To accelerate fading action. 3. To accurately control test conditions and permit their reproduction at any time, independent of weather or season. 4. To operate continuously for a 24 hour period.

NEW DESCRIPTIVE BULLETIN. Gentlemen: Please send me your new literature on the "National" Type XV Accelerated Fading Unit.

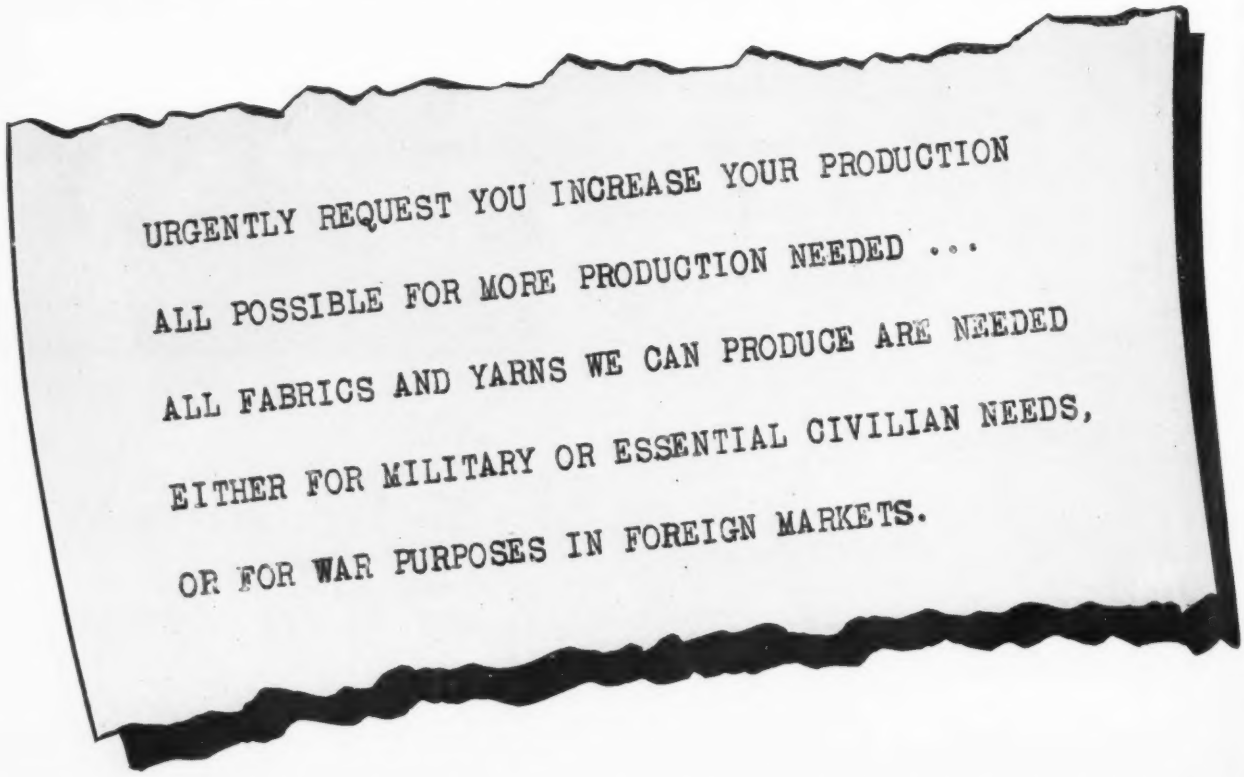
Name _____ Position _____

Address _____

The National
TRADE-MARK
TYPE XV ACCELERATED FADING UNIT

NATIONAL CARBON COMPANY, INC.
Unit of Union Carbide and Carbon Corporation
UCC
CARBON SALES DIVISION, CLEVELAND, OHIO
General Offices: 30 East 42nd St., New York, N. Y.
Branch Sales Offices: New York, Pittsburgh, Chicago, St. Louis, San Francisco

A TELEGRAM FROM THE WPB . . .


URGENTLY REQUEST YOU INCREASE YOUR PRODUCTION
ALL POSSIBLE FOR MORE PRODUCTION NEEDED . . .
ALL FABRICS AND YARNS WE CAN PRODUCE ARE NEEDED
EITHER FOR MILITARY OR ESSENTIAL CIVILIAN NEEDS,
OR FOR WAR PURPOSES IN FOREIGN MARKETS.

AND AN ANSWER FROM TAYLOR

WE HAVE an idea the War Production Board was hoping for only *one* kind of answer to this telegram they recently sent to 519 textile mills:

"O.K., WPB, you can count on us!"

If you feel that way, we KNOW that Taylor Instruments can help you. Here's how:

1. Taylor Instruments on slashers definitely increase weave room efficiency.

2. On dye machines, Taylor accuracy helps assure uniform quality, thereby reducing re-dyes and rejects.

3. In size-cooking, the new Taylor Fulscope Time Schedule Controller gives you completely automatic control. You just load the kettle and push the button!

4. Cotton goods finishing operations, such as mildew-proofing and waterproofing with "Zelan," require accurately controlled temperatures in drying to obtain maximum control of the specified qualities. And "Taylor means Accuracy First!"

Your Taylor Field Engineer is anxious to tell you the whole story! Phone your nearest Taylor office, or write or wire Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow, and liquid level.*

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

★ ★ ★ KEEP ON BUYING ★ ★ ★
U. S. WAR SAVINGS BONDS AND STAMPS

THIS IS SERVICE!

Carrier Tells You How To Keep Your Equipment at Peak Operating Efficiency for the Duration

To help you enjoy the continued benefits of your air conditioning, refrigeration and heating system Carrier has prepared a 5-Point Service Plan.

Today, in the face of increasing shortages of such equipment, replacement parts and trained service men, this check list is a timely guide to insure peak operating performance.

You will find your Carrier distributor or representative ready to give you expert service whenever it is needed and to cooperate with you in every way to help you keep your equipment operating efficiently and economically.

CARRIER CORPORATION, SYRACUSE, N. Y.

5-Point Service Program

1. Make Maintenance of Equipment the Responsibility of a Capable Employee.

2. Make Regular Monthly Inspection of all Equipment. See that it is Properly Lubricated.

3. Keep Equipment Free of Dust and Dirt and Check Frequently for Refrigerant Leaks.

4. Follow Operating Instructions Furnished with Each Type of Equipment.

5. Have Nearest Carrier Distributor Inspect Installation to Insure Satisfactory Operation and Avoid Expensive Repairs.

Carrier

ARMY E NAVY

AIR CONDITIONING · REFRIGERATION

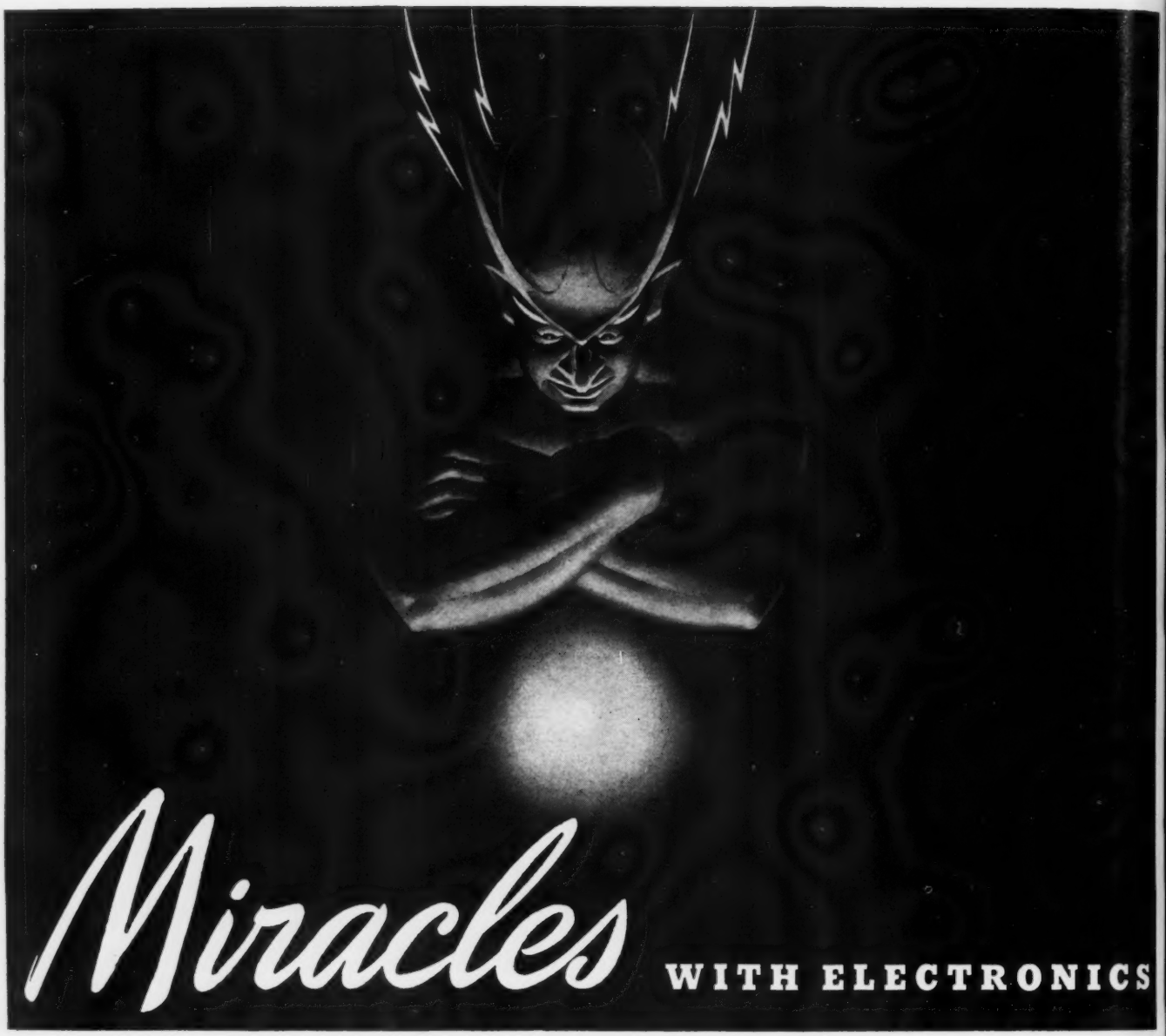
CARRIER CORPORATION
Desk 44-C
Syracuse, N. Y.

Please send free copy of booklet: "Civilian Conservation of the B. T. U." telling how to keep air conditioning and refrigeration equipment operating for the duration.

Name .....

Company .....

Address ..... City .....



ELECTRONICS bids fair to revolutionize our every day living after the war. When Brown and Minneapolis-Honeywell placed experience and manufacturing resources at the call of our government, the result of several years of research in Electronics was immediately applied to instruments—for Testing airplanes in flight—for Controlling production of high octane gasoline—for Treatment of special alloy steels for tanks, guns and armor plate—for Manufacture of synthetic rubber—and for many other purposes entering directly into the war effort.

Extending this peacetime experience to the technique of war, will bear fruit when Peace comes again, in startling new developments in the Electronic control of industrial processes—busily engaged in peacetime production.

Instruments by **BROWN** *and Controls by*

MINNEAPOLIS-HONEYWELL

THE BROWN INSTRUMENT COMPANY, 4509 WAYNE AVENUE, PHILADELPHIA, PENNSYLVANIA
DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.
MINNEAPOLIS, MINNESOTA, AND 119 PETER STREET, TORONTO, CANADA
Wadsworth Road, Perivale, Middlesex, England Nybrokajen 7, Stockholm, Sweden

DURABILITY AND THE DURATION

Yardage by the mile...these few words best describe the tremendous demands now being made on American textile producers by our armed forces ☆ The material available for civilian use, therefore, must be processed to insure its maximum life ☆ Never was durability more at a premium ☆ There are ample supplies of high-class dyestuffs to meet military requirements and to color all civilian fabrics that will be manufactured.

GENERAL DYESTUFF CORPORATION

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

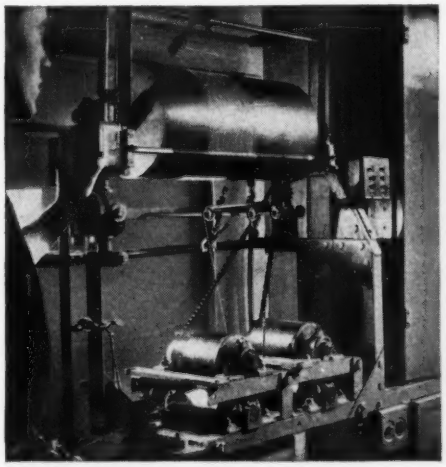
ESTABLISHED 1840

Textile chemicals

ARE ONLY ONE GROUP OF MANY PRODUCTS OF ROHM & HAAS RESEARCH THAT WORK FOR INDUSTRY IN PEACE AND WAR

AMONG textile mills, Rohm & Haas Company is best known for its development of TRITONS, RHOTEXES, DEGOMMAS, RHOPLEXES, RHONITES, PROTOLIN, FORMOPON and LYKOPON.

This Company through research has expanded into many other fields of industry. This page shows a few typical examples.

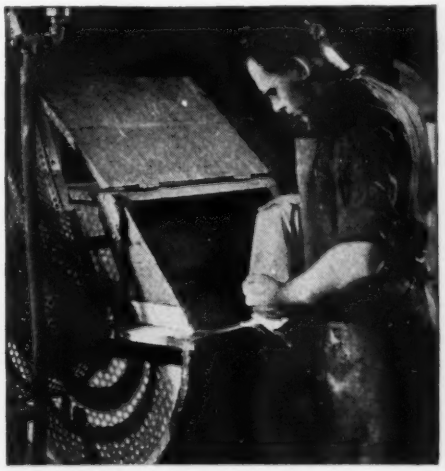


MODERN FAST TEXTILE COLORS presented a need for reducing agents. Rohm & Haas LYKOPON was the first to fill this need. Among our many other developments are RHONITE finishes that make fabrics "crushproof". This yarn slasher is typical of equipment in our textile laboratories which permits close approximation of mill results.

CRYSTAL-CLEAR ACRYLICS are stronger, lighter and more transparent than glass. This type of plastic was first investigated in Rohm & Haas laboratories, first brought into commercial production in our plants. Known as PLEXIGLAS, it forms noses, tail assemblies, cockpit covers, gun turrets aboard every type of Army and Navy airplane.

SEARCH FOR A SYNTHETIC, organic insecticide made wholly from American raw materials was started 15 years ago by Rohm & Haas chemists. LETHANE was found in 1930. Today, LETHANE 384 and LETHANE 384 SPECIAL stand ready to provide a major portion of the toxicants for the nation's livestock, industrial and household sprays.

LETHANE 60 WAS DEVELOPED for use in agricultural dusts and sprays. Wide commercial use of this synthetic insecticide has demonstrated that replacing 50% of the rotenone or pyrethrum in dusts and sprays with LETHANE 60 not only stretches this country's limited supplies of botanical toxicants, but actually makes better products.



THE ROHM & HAAS COMPANY developed the first synthetic bate for leather. Today, this bate, under the name OROPON, is in common use in every country of the world. Later developments include synthetic tanning materials to produce great amounts of high quality white leather and finishes producing flexible and washable leathers.

TRITON, RHOTEX, DEGOMMA, RHOPLEX, RHONITE, PROTOLIN, FORMOPON, LYKOPON, PLEXIGLAS, LETHANE and OROPON *are trade-mark, Reg. U. S. Pat. Off.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Chemicals including Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes . . . Chemicals for the Leather, Textile and other Industries

Why risk Interruptions

IN AUTOMATIC CONTROL?

It's easy to *play safe* with Quick-Check Maintenance Cards!

Have you ever considered what it would mean to operate your plant without automatic temperature controllers? More work . . . more waste . . . curtailments in output!

Foxboro now offers you an easy way to forestall neglect, or accidents to instruments that might necessitate such costly operation. Without charge, you may obtain Foxboro Quick-Check Cards outlining essential maintenance steps for each major type of instrument in your plant.

Attached to your installations or conveniently filed, these 9" x 11" Quick-Check Cards map out an easy routine that will keep instruments operating at top efficiency for the duration . . . save the uncertainties of wartime replacements or repairs . . . help to prevent interruptions in instrument performance. Equally useful for Foxboro or any other standard instruments.

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★ ★ ★

This typical Quick-Check Card gives complete instructions "in a nutshell" for easy maintenance of Temperature Controllers and precision Control Valves of any standard make. Similar cards available for all major types of instruments.

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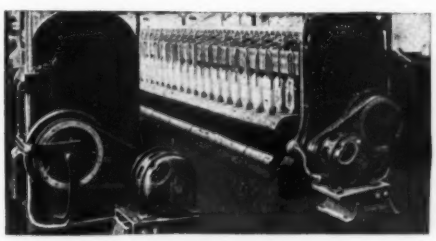
On Pivoted Motor Drives, Research Leather Belting Outlasts Rubber V-Belts 2 to 1

Consider the extra flexing a belt gets on a short-center drive. You'll find Research Leather Belting has the necessary pliability to take that constant punishment with less internal friction than any other belt — rubber or leather.

Consider tension. Research Leather Belting has "built-in" pulley grip; it hugs a greater arc of the pulley, so tension can be reduced, relieving wear on bearings as well as belt.

Any leather belt will outlive a rubber V-belt on a corresponding pivoted motor drive (see "Fifty Reports on Mechanical Power Transmission from Motor Drive to Industry" — Robert Drake). And *Research* Leather Belting gives you the best in leather — that's why more pulleys are turned by Research than by any other brand.



Research Leather Belting on Pivoted Motor Base Drive ("Production Drive")

GRATON AND KNIGHT

GRATON & KNIGHT CO., Worcester, Mass.

Only leather belting manufacturer with complete nation-wide service facilities. Branches in Chicago, Cleveland, Dallas, Detroit, Kansas City, Minneapolis, New York, Philadelphia, San Francisco. See adjoining column for distributors (also listed in THOMAS' REGISTER.)

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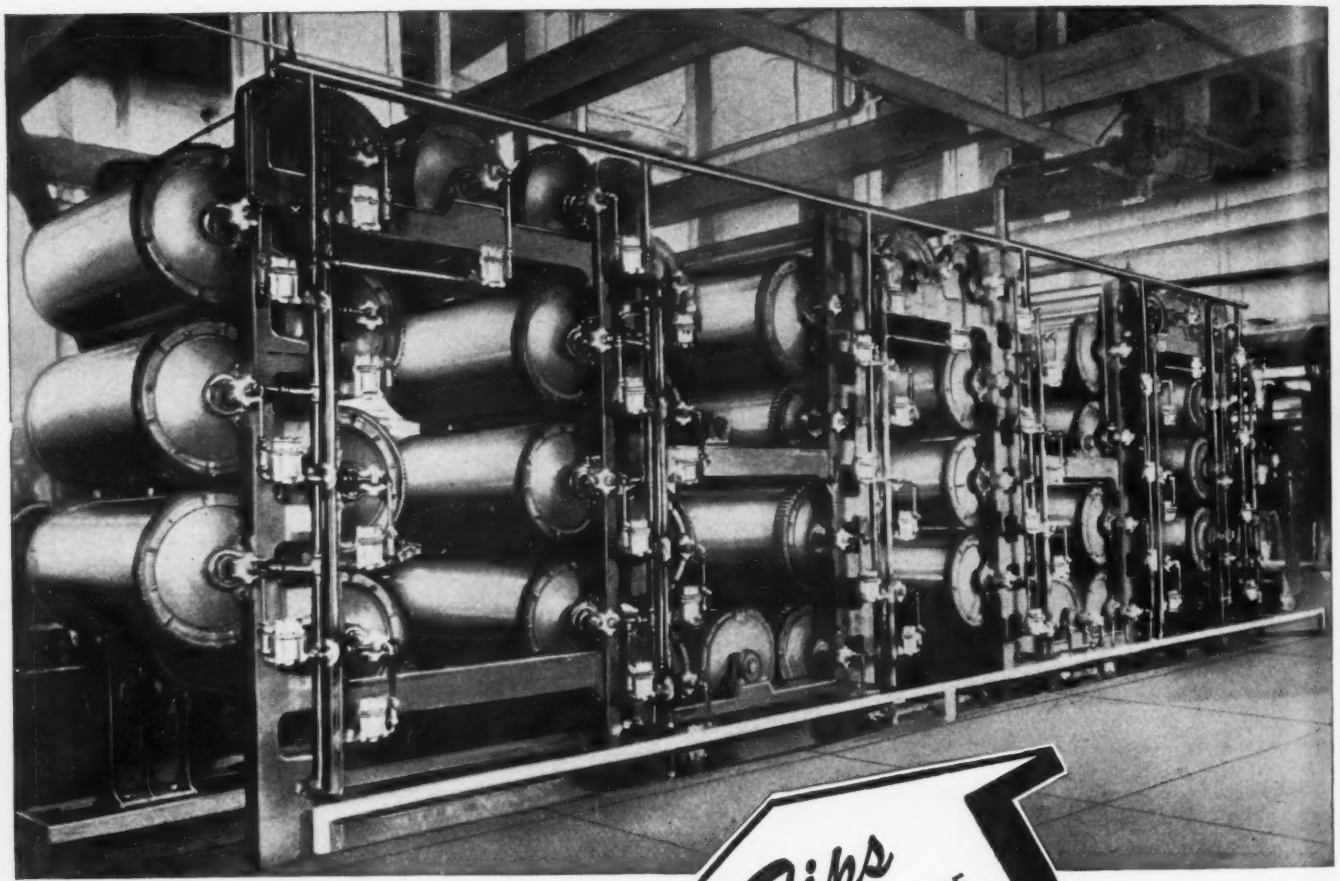
WITH THE RIGHT BEARINGS



● *Built by*
H. W. BUTTERWORTH & SONS CO.

Butterworth engineers do not take chances on the performance of the bearings on which this 50-Stack Vertical Dryer runs. They can't afford to. Bearing trouble on this machine would mean a slowdown in the drying of vital materials for the armed forces. By using SKF Bearings, they avoid bearing trouble . . . and obtain smooth performance through their inherent self-aligning feature. Cleanliness is also a certainty because SKF's require only infrequent lubrication despite adverse temperature conditions. When Production puts it up to a bearing, that bearing is usually an SKF. 5250

SKF INDUSTRIES, INC., PHILA., PA.

Tips
ON BEARING CARE
To make present equipment last longer

1. Use clean lubricant recommended by the manufacturer of this machine.
2. Avoid loads and speeds beyond those recommended by the manufacturer.
3. If necessary to remove bearings, keep them properly lubricated. Avoid the intrusion of water and dirt. Apply pressure on the inner race only. Don't hammer outer race.

SKF
BALL AND ROLLER BEARINGS

OF COURSE YOU'LL BE USING MAGNESIUM

Mazlo Magnesium Warp Beams, a prewar product, are today speeding knitting mill production.

Here's Experience To Tie To

WE are not a producer of the metal. American Magnesium Corporation is a manufacturer of Magnesium in the forms in which you receive it—castings, forgings, shapes and sheet. We are specialists in the design of Magnesium parts, in their machining, finishing and fabrication.

For over twenty years, American Magnesium Corporation has "stuck to its knitting," helping our customers take full advantage of Magnesium as a high strength weight-saver. Our research has been devoted exclusively to bettering Mazlo products and reducing their costs. Our engineers and plant men have the knowledge and skill that come from these years of doing such jobs.

Many companies are working with Magnesium now, who never before had it in their shop. These are war products, of course, but the manufacturers are learning how Magnesium can improve their normal products. After the war, your designers will have to face the competition of such products made lighter, and probably cheaper, by the use of Magnesium.

The twenty years' experience of American Magnesium engineers is available to designers, builders and users of equipment, who are wondering where Magnesium will fit into their postwar picture. Write our sales agent, Aluminum Company of America, 1705 Gulf Building, Pittsburgh, Pennsylvania.

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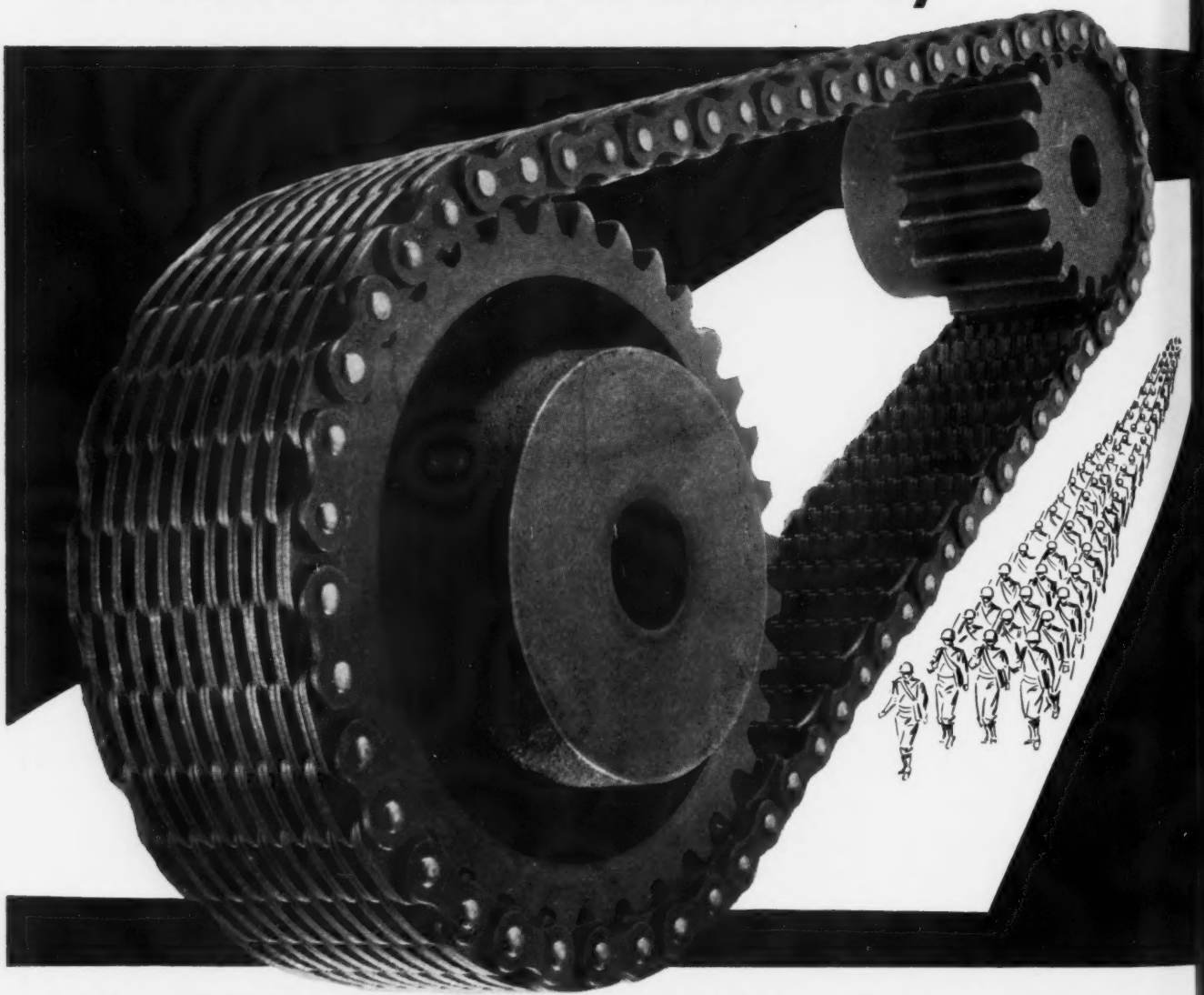
There's Always

Silence in the Ranks

of Textile Machines Driven by



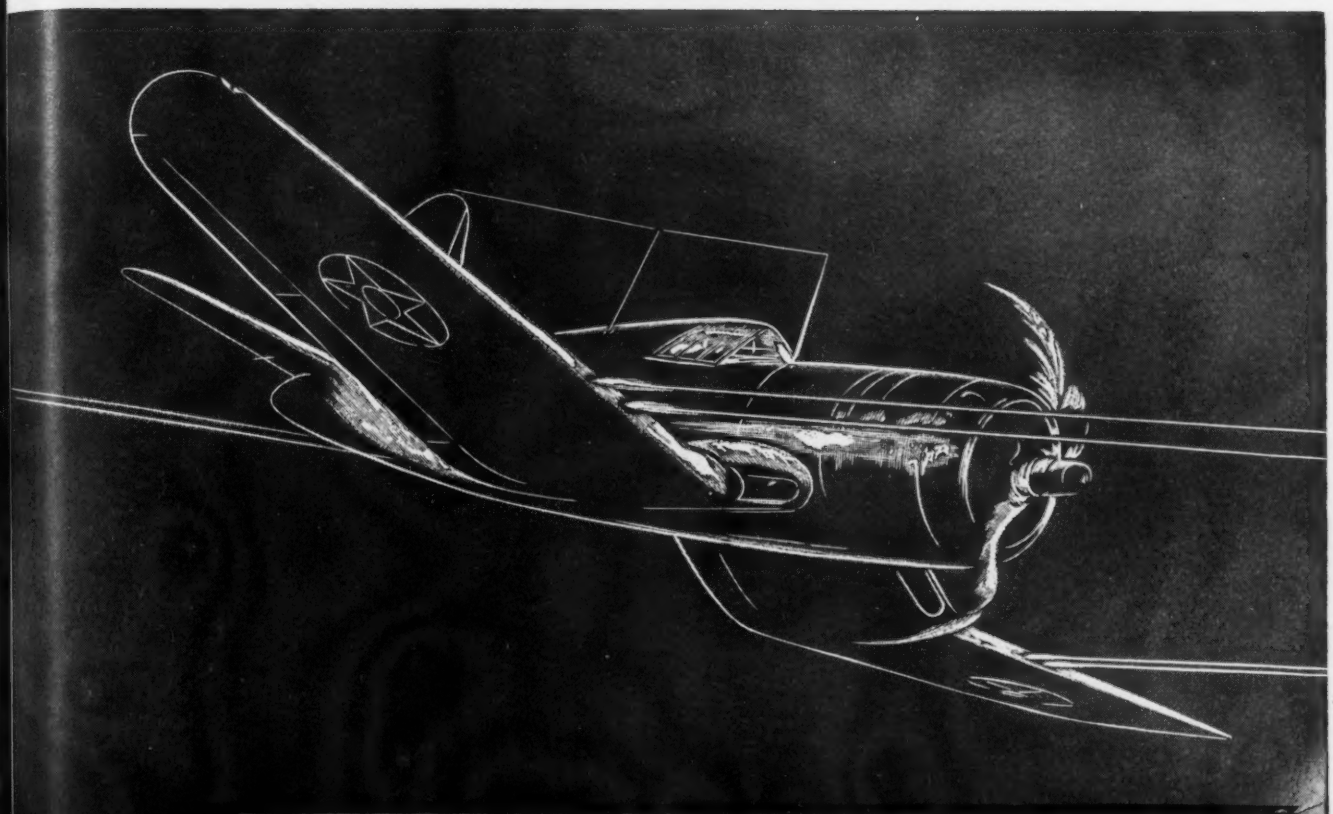
WHITNEY SILENT CHAINS

Production marches forward in good order, in silence . . . and with every machine in step . . . when power drives are equipped with Whitney Silent Chains. This is the experience of years for 20 leading builders of textile machines who have standardized on Whitney Silent Chains. Full power goes smoothly to work, at constant speeds that preserve product-uniformity and customer goodwill. So whether you are a machine builder or mill man, remember that it's your best Performance-Protection to specify Whitney Silent Chains for your machines. For these are the chains you never hear from once they have gone to work.

Prolong Chain Life

Keep sprockets properly aligned, chains properly lubricated, and inspect all drives regularly.

The Whitney Chain & Mfg. Co., Hartford, Conn.



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IN WETTING OUT...

SURFAX W.O.

In tune with the times, Houghton's Surfax W. O. gives you *faster* wetting out for all types of textile processing. It's concentrated . . . you use less, yet get speedier wetting out and superior wetting-back properties, so important in sanforizing. Surfax W. O. has great efficiency at high or low temperatures. Use it as a softener, as a dye-bath leveler, as a penetrant, as an aid to the sanforizing process. The Houghton Man has the facts . . . ask him, or write—

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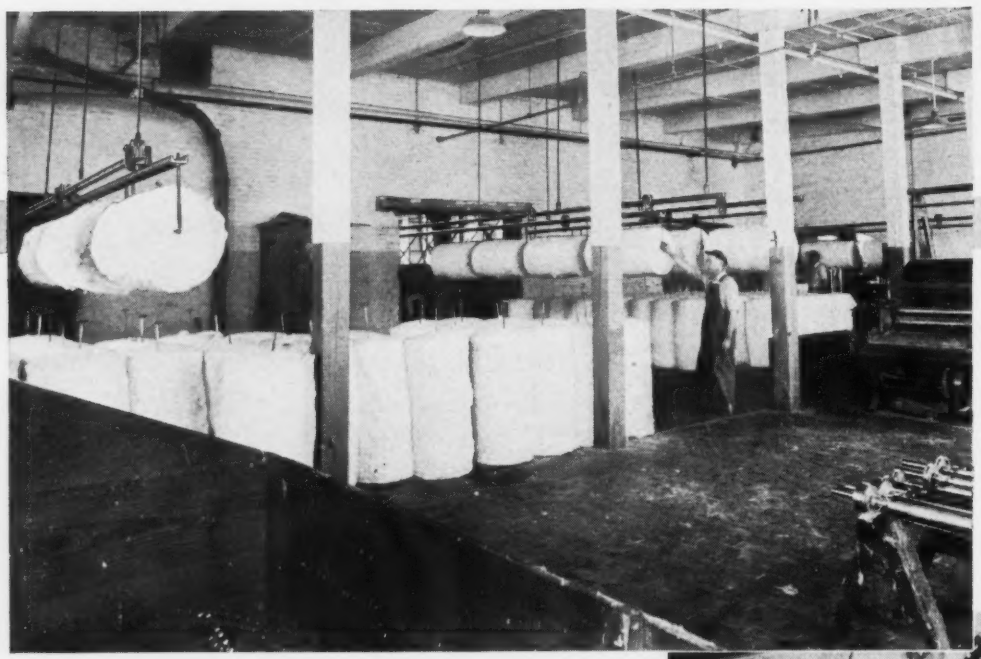
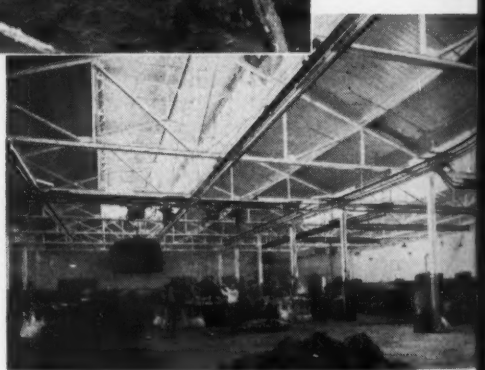


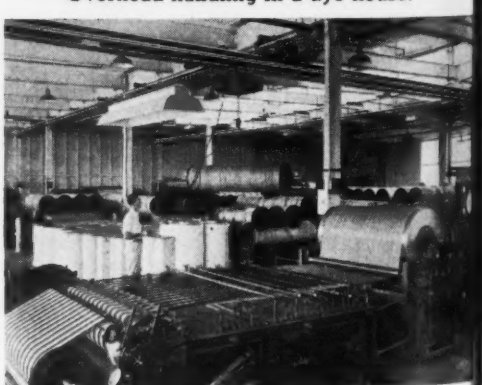
Laps move to card room on special MonoRail carriers.

IN HUNDREDS of textile mills, from opening room to shipping room, throughout the entire process, American MonoRail equipment is eliminating congestion and damage in transit, relieving men of lifting and carrying and enabling them to give full time to production. It is putting to best advantage many thousands of feet of floor space by enabling higher piling of materials, better and closer arrangement of machinery and equipment.

American MonoRail Equipment is extremely flexible. Standard parts fit quickly into complete systems to meet a wide variety of handling problems. An American MonoRail system can carry your product at the lowest possible cost and the highest possible efficiency. Our engineers will gladly show you how it can be done in your mill. Remember — overhead handling reduces handling overhead.



Overhead handling in a dye house.



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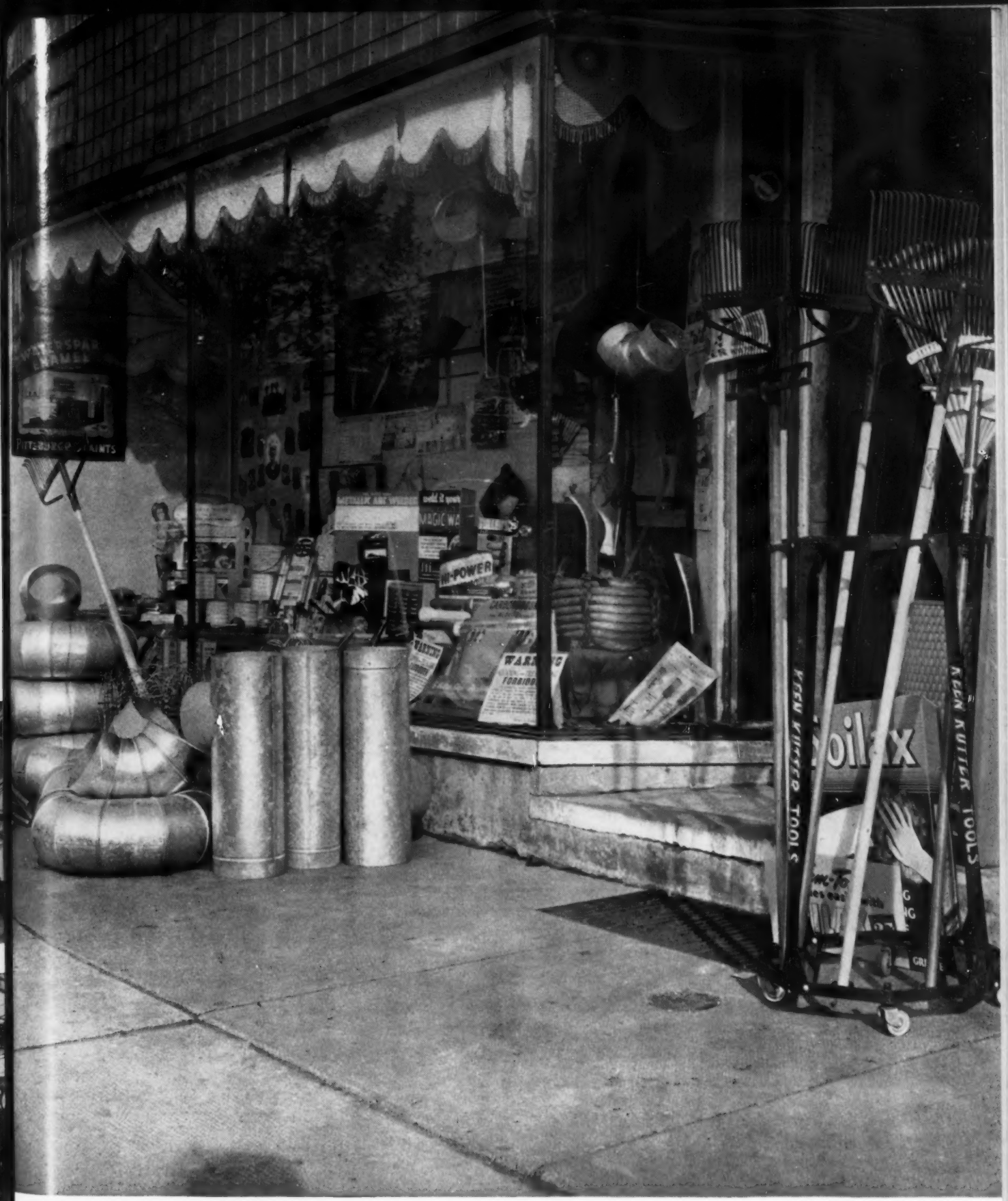

"Keep your shop and your shop will keep you."

WILLIAM TURNER

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

The W[illegible] Flags of TMW include: Army-[illegible]vy "E" awarded November [illegible], 194[illegible] All-Navy "E" Burgee awarde[illegible] May 18, 1942; Navy "E" Penna[illegible] awarded July 25, 1941.

Fair and Lovely . . . Every woman knows that the clear, subtle magic of her stockings helps her to attain the perfect grooming she so desires. Every hosiery manufacturer knows that good needles are indispensable in achieving even texture in full-fashioned knitting. Keep your knitting machines young and effective with TMW Needles. *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

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RE-LIGHTING

the new manpower / production *requirement*

Vital to plants built and lighted for daylight operation

Most plants operating today were designed and built for peacetime, *daylight* working schedules. Wartime production demands night work. *Lighting based on daylight conditions is inadequate to serve the needs of night workers.*

Night production is generally acknowledged to be anywhere from 20% to 40% less efficient than daytime production. And poor lighting, with its consequent eyestrain, fatigue, and lower worker efficiency, is a major cause of this slump.

Re-lighting for 24-hour-a-day war production is the easiest, most economical remedy for this condition. Re-lighting does not mean discarding your present lighting system. It merely means bringing the equipment you have up to date by re-locating lamps to eliminate glare and shadow; increasing lamp wattages, re-spacing lamps, installing additional equipment to insure uniform lighting levels throughout your plant. A Silv-A-King lighting engineer can tell you exactly.

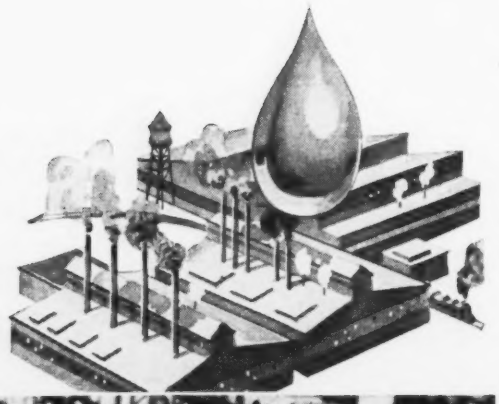
Send for your copy of our 16-page book:
"Light Is An Essential Production Tool"

Silv-A-King's part in the war effort includes the production of parts for torpedoes, bombs, gliders and other aircraft; as well as naval and surgical equipment.

BRIGHT LIGHT REFLECTOR COMPANY, INC.
306 Morgan Avenue, Brooklyn, N.Y.

SILV-A-KING MAKES *Light* WORK FOR YOU

Proper Lubrication is a wartime **must!**



Reduced friction means increased production – call in a Gulf Lubrication Service Engineer for effective help on your maintenance problems.

IN the high-speed drive for more and more production, that old devil "Friction" finds its greatest opportunity for damage. Now, more than ever, extra lubrication care pays big dividends.

Here are some of the more important steps you can take today to insure continuous full capacity operation of your equipment: Check to see that all shafts, bearings, and gears are properly aligned; check whether all moving parts are kept clean; and call in a Gulf Lubrication Service Engineer to help you install the best possible lubrication practice.

With a background of thorough training and broad practical experience with equipment similar to yours, Gulf Lubrication Service Engineers will help you obtain maximum production from every unit, a minimum of production delays caused by breakdowns and mechanical troubles, and other worthwhile benefits.

The services of a Gulf Engineer — and the Gulf line of more than 400 quality lubricants— are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

FOR VICTORY BUY
UNITED STATES
WAR BONDS
AND STAMPS

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION • GULF REFINING COMPANY
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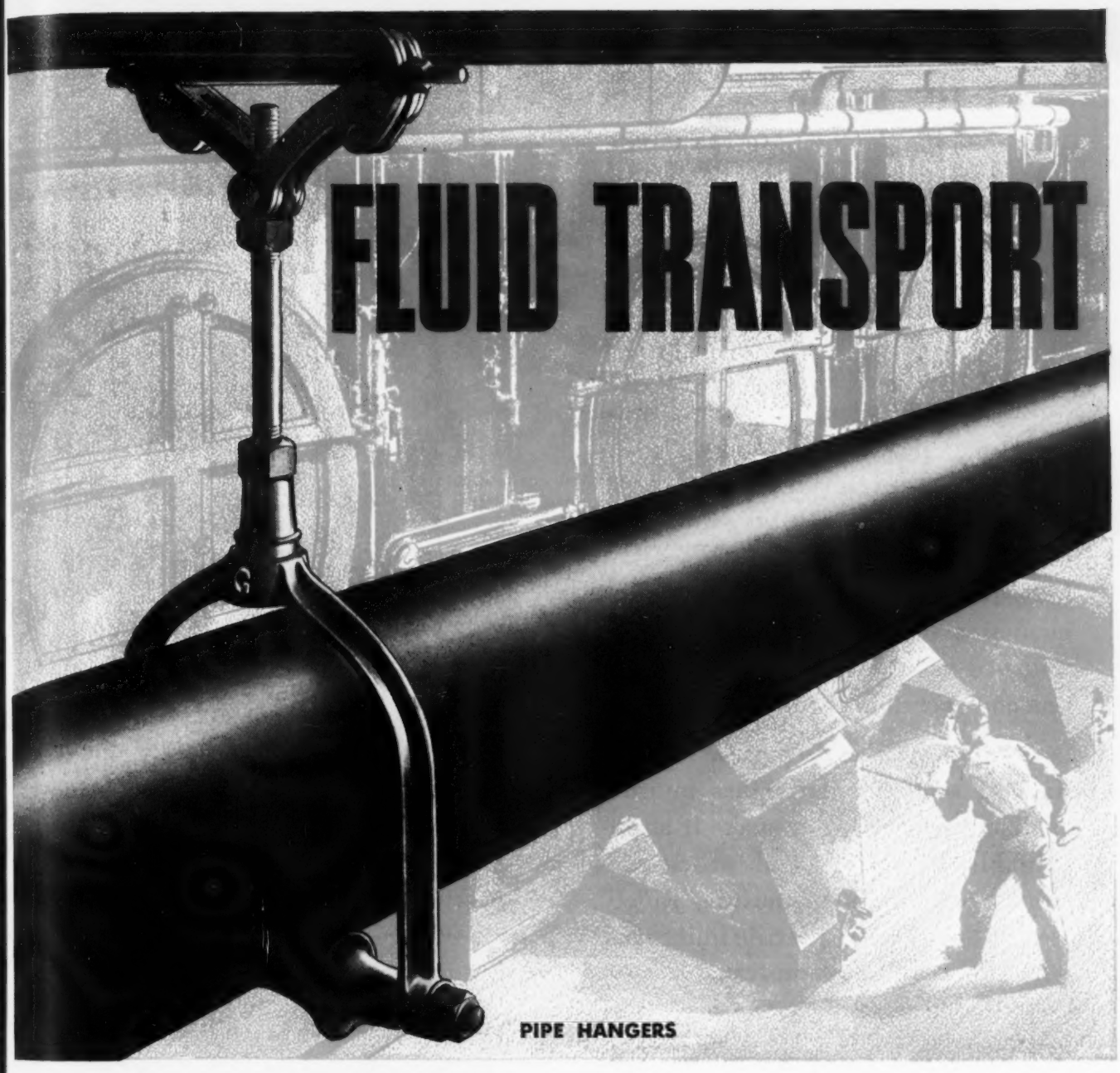

"THE NORTH WING HAS STOPPED 'SQUAWKING'." It takes more than pipe alone to distribute steam for power, processing and heat to all the spots in a plant where steam is essential. It calls for experienced piping engineering to compensate for such factors as weight, pressures, exposures, expansion and contraction.

The distribution of steam is a job for Grinnell FLUID TRANSPORT. As fabricators and manufacturers Grinnell supplies the connecting links which convert a pile of pipe into a complete piping system.

For new war construction, or maintenance and repair of existing piping, call your nearby Grinnell branch. Grinnell Company, Inc., Executive Offices, Providence, R. I. Plants and offices throughout the U. S. and Canada.

GRINNELL

WHENEVER **PIPING** IS INVOLVED

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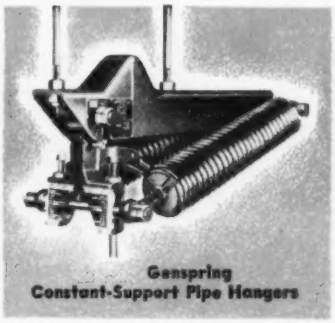
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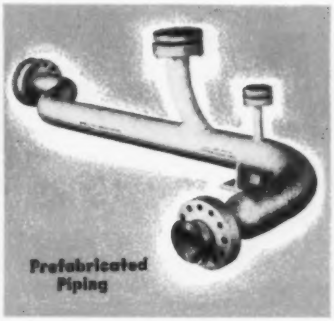
Pipe and Tube Fittings


Prefabricated Piping

THE CHEMICAL COMPOUND THAT OUTDID

Rip Van Winkle

• Commercially, *sodium chlorite* was asleep for 100 years. It was not until 1941 that it came into its own – when it was first produced in commercial quantities at Mathieson's new chlorite plant at Niagara Falls. Fourteen years of intensive research and practical experimentation by the Mathieson technical staff had preceded the actual construction and operation of the plant.

Long known to chemists by the formula $NaClO_2$, sodium chlorite has unusual oxidizing powers which make it an invaluable bleaching and processing agent. Today sodium chlorite is widely used in the paper and textile industries. It has successfully demonstrated its ability to bleach paper pulp and textiles to high whites without loss in tensile strength – a result that no other known processing agent has been able to achieve. Non-hygroscopic and readily soluble in water, sodium chlorite is highly stable both in solution and in solid form . . . can be heated to 150 degrees C. without decomposition.

Every day this exclusive Mathieson product is finding new applications in American industry – at a time when progress and production are as vital to victory as all-out offensives on the fighting fronts.

DO YOU KNOW THESE FOUR SODIUM CHLORITE PRODUCTS?

- *Textone* for textiles
- *C2* for paper pulp processing
- *Sodium Chlorite Technical* for general commercial oxidation and processing
- And, of course, the *pure analytical grade* used as a laboratory reagent

Mathieson

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Textile World

MARCH, 1943 • VOLUME 93 • NUMBER 3

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IN THE NEXT

THE KNITTING INDUSTRY is the subject of a special section in the April issue. The economic status of the industry, its contributions to the war effort, and the yarns which are now available to it for manufacturing civilian goods will be analyzed. For the technician there will be practical articles covering knit goods defects, dyeing Army underwear, rayon hosiery technique, etc. A special article will be devoted to training new employees for knitting.

In the regular portion of the April issue further stories are scheduled on the manufacture of military goods, including blends for Army overcoatings, flameproofing military fabrics, and the third installment of "Manual of Military Fabrics." There will be further contributions which cover weave-room supply system, piece-goods mercerizing, maintenance of water treatment equipment, etc.

CHANGE OF ADDRESS

McGRAW-HILL PUBLISHING COMPANY
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To .....

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FOR THE TEXTILE INDUSTRY

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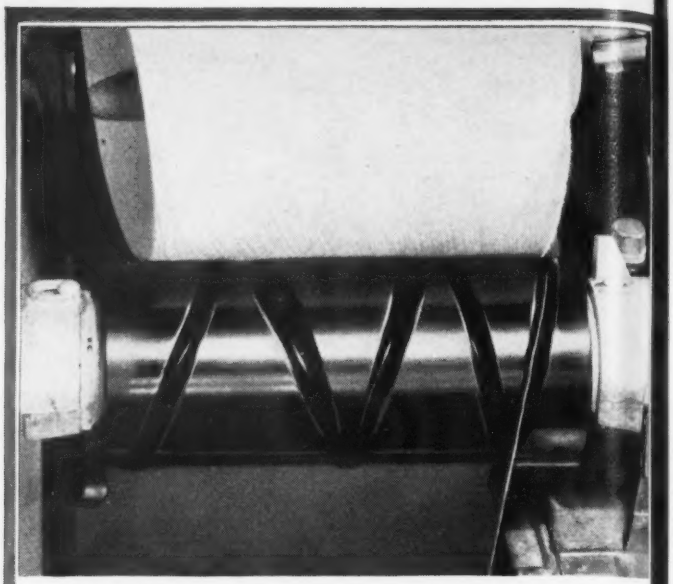

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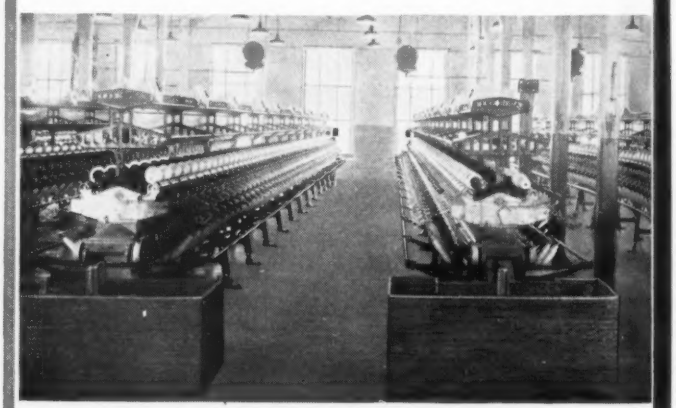

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Textiles—in War as in Peace

World's oldest industry performs modern miracles

WITH ever quickening tempo the friendly hum of the spinning wheel has echoed down the centuries—symbol of a mighty industry.

Its hum is heard today above the din of war.

Capt. Rickenbacker heard it as the lives of his party depended upon a thickness of rubberized fabric.

The hard-pressed soldier on a far-off Pacific isle hears it when he sees fresh supplies and ammunition descending from the sky via friendly parachute.

Adolf Schickelgruber hears it when winter joins forces with the enemies of his ill-clad armies and hastens the day of his defeat.

Yes, man is dependent upon textiles from the cradle to the grave—in peace and in war.

In peace man demands comfort and beauty. In war he must have comfort and protection. The textile industry is coming up to these expectations.

It is developing hundreds of special fabrics for special purposes. It has created clothing for wear, miles high in the stratosphere, and fathoms deep under the sea, clothing to meet the daytime heat of the desert and the bitter cold of its nights, clothing for the tropics and the Arctic, the swamps and mountains—for every climate and every condition.

Modern scientific warfare has forced the development of textiles that were not even thought of a year or two ago: camouflage nets; strong, light, wind-resistant Nylon tentings for the Arctic; heavy Nylon rope for glider towing; parachutes and parachute shrouds; self-sealing gas tanks; panzer hangars; cartridge and powder bag cloths; helmet linings; gas masks; fuses; canvas tops; windshield fabrics and seat upholstery for jeeps, trucks and other motorized equipment; uniforms for all armed services and for nurses, WAACS, WAVES, SPARS and MCWRS. Then there are windbreakers, raincoats, ski-troop uniforms and other items two numerous to mention. The Star Spangled Banner itself is a textile.

The Quartermaster Corps alone has issued specifications for over 300 different fabrics! Add to this the requirements of the Navy, the Air Forces, the various Civilian Defenses, the Red Cross and Lend-Lease and the sum total of textiles required for military and allied uses is approximately 70% of the total produced before the war to meet civilian requirements!

How the textile industry has been able to meet this unprecedented war demand, superimposed upon the industrial and essential civilian needs, is an inspiring story.

First, it stepped up its production to an all-time high. *Textile World*'s index of textile-mill activity records three successive records for 1940, 1941 and 1942, the period covering the defense program and the first year of the war. This index for 1942 stood at twice that of an assumed "normal" year. It is noteworthy that this was accomplished mainly with existing equipment.

Second, the textile industry did a job of plant-conversion which was a masterpiece of intra-industry cooperation and idea-sharing.

Third, its technicians developed new and superior fabrics and finishes. Its engineers and production men increased the speed and the efficiency of the entire production machine.

How well all this was done becomes evident when we consider the obstacles to be overcome. Imports of critical fibres have been cut off. There is a shortage of certain chemicals and dyes. There is a high rate of turn-over in manpower and a shortage in experienced labor. It is increasingly difficult to secure machines and repair-parts—just to mention a few of the major problems.

But the textile industry delivered. It has built up an adequate reserve for our rapidly expanding armed services. It is helping to supply the armies of our allies. It is providing for our civilian population . . . all without giving the war leaders a single moment of serious worry.

Major General Edmund B. Gregory, Quartermaster

This is the ninth of a series of editorials appearing monthly in all McGraw-Hill publications, reaching more than one and one-half million readers, and in daily newspapers in New York, Chicago and Washington, D. C. They are dedicated to the purpose of telling the part that each industry is playing in the war effort and of informing the public on the magnificent war-production accomplishments of America's industries.

General of the United States, in special statements prepared for *Textile World*, and in addresses before textile groups, has stated that the cooperation of the textile industry has been outstanding and that the industry has kept ahead of schedule on all the major types of fabrics required.

General Gregory recently pointed out that of the approximately 234,000,000 yards of combed twill produced in this country in 1942, the Army took about 87%, the Navy 10%, leaving 3% for non-military purposes.

Col. Robert T. Stevens, of the Quartermaster Corps, in a recent address, referred to the output of duck. Production of that vital military fabric was twice doubled in six months, between January and July 1942, he said, and an annual capacity of 600,000,000 yards of all types of duck was made available. "The current rate of production of cotton duck is five times normal," said Col. Stevens, "and 38% comes from converted carpet, plush and upholstery mills. Based upon known requirements, production in this field is fully adequate".

"Fully adequate" is high praise when it refers to duck production. At the outbreak of the war it looked as if there was no possible chance of meeting requirements, at least during the first year. Nor would there have been if other types of mills had not shifted to making this fabric, and if experienced duck manufacturers had not gone "all-out" in teaching the newcomers, potential post-war competitors, everything they knew about the manufacture of duck. American industry offers many such examples of unselfish cooperation.

Another outstanding accomplishment, made necessary by the interruption of burlap imports, was the conversion of looms producing peacetime fabrics to the production of bag fabrics. The tremendous demand for sandbags, camouflage cloth, food, agricultural and other bagging, caused a conversion order to be issued for the purpose of raising the annual production rate of osnaburg from 263,500,000 yards to 660,000,000 yards, and bag sheeting from a rate of 488,000,000 yards to 855,000,000 yards. The result of this order, and of the military schedules already in effect, was to put the cotton weaving industry about 88% into war, essential industrial, and essential civilian production.

Plant conversion went on with feverish speed. Carpet looms were swung to blankets and duck; the lace industry turned to mosquito netting and insect netting of which it produced millions of yards. The flat-knitting industry with its tricot machines also is engaged in the manufacture of mosquito netting. The sewing thread industry was converted to the production of combed yarns. What once was the silk industry is now doing a tremendous amount of war work. Those mills which had equipped themselves for throwing Nylon yarns for hosiery are now throwing the Nylon for parachutes. That section of the silk industry that was equipped for weaving rayon fabrics is producing fabrics of high-tenacity rayon for flare chutes, cargo chutes and delivery chutes. Many silk and rayon looms that formerly wove clothing materials are now weaving parachute fabrics.

Today practically all Nylon is used for military purposes and the bulk of high-tenacity rayon goes into military fabrics.

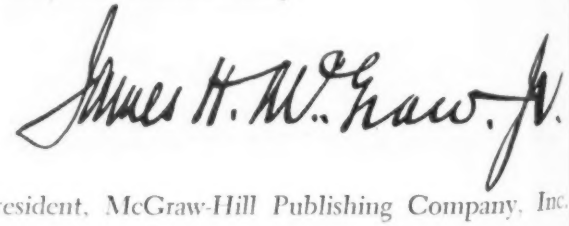
Above and beyond all the new developments is the gigantic job of producing millions of yards of standard fabrics of many colors and weaves. To produce all the uniform fabrics and blankets is in itself quite a job. The woolen and worsted industry has been doing it magnificently. Tent fabrics and summer fabrics produced by the cotton industry are no less a formidable assignment. I could point to myriad other jobs no less impressive.

The production man can indeed take pride in this record and behind the production man, the textile technician has been working tirelessly. Mildewproofing and waterproofing, so vital in a world at war, are in a new stage of effectiveness. A new process for waterproofing fabrics employs vinyl acetal plastic in place of precious rubber. Textiles that glow in the dark have been perfected for black-outs and other applications. American genius is solving problems many of which seemed insurmountable. Silk, for example, was something the Japanese thought we could never duplicate. A new synthetic textile filament that weighs but one eighth of the finest silk filament threatens to put the Japanese silkworm out of business after the war so far as we are concerned. The post-war possibilities of this development challenge the imagination.

Nor has the primary textile industry been alone in its contribution to the war. The textile machinery industry has been converted almost entirely to war work, save for a few facilities required to relieve extreme bottlenecks and supply essential maintenance and repair-parts.

Similarly, some textile mills, particularly hosiery mills hard hit by the silk and Nylon cut-off, are utilizing their space and skilled staffs to produce parts for war equipment.

The immediate significance of all this is its importance in the winning of the war. There is, however, a post-war implication which is important to the future of America. A mass production textile industry will serve civilians after the war more effectively than ever before, and will put new standards within the reach of millions. A long step has been taken toward that completely synthetic textile industry which some observers see in the future. The tempo of such changes has been accelerated tremendously. The oldest industry in the world, now one of America's largest, is showing a youth and vigor that promise much for the future ... nationally and internationally.



President, McGraw-Hill Publishing Company, Inc.

DOUGLAS G. WOOLF, EDITOR

The Manpower Problem

IN COMMON with all Americans, textile manufacturers must approach the manpower problem, now reaching a crisis stage, with this single thought and purpose: The first requirement is for men for the Armed Services, the second for men for essential war production, the third for essential civilian production. Everything below those three classifications must be regarded as a frill, as something dispensable.

But among those three essential groups, there is an infinite number of variables in the different mill communities. In one section, a large number of unskilled or semi-skilled workers may be dispensable, because of the existence of a reservoir of women workers, and of men workers unfit for military service. In another section, the absence of such a reservoir may make it necessary to retain men otherwise available for military service.

Similarly, in the case of skilled workers—loom-fixers, mechanics, overseers and superintendents—some textile communities remote from congested war-production areas will not feel the drain from other industries. Others will.

The answer is that the textile manpower problem, like all other phases of that problem, cannot be solved entirely by Washington. Its solution requires also the patriotic and intelligent action of local industrialists and of local draft-boards.

TOWARD THAT END, it is helpful to set down certain basic principles:

1. The decision as to the number of men required for military service must be left to the military organization. Most of us, by now, have boys in the Armed Forces. None of us would want the lives of our boys imperilled by inadequacy of reserves. Consequently, nothing that any textile manufacturer can do, within reason, to release more men as reserves to replace the casualties is too great a price to pay.

2. Despite the priority of that basic principle, it must be remembered that textile manufacture is an essential war industry. It did not require the statement of Chairman McNutt to establish that fact. An army cannot fight without pants, or tents, or the hundreds of textiles that go into action on the ground, in the air, on the sea, and under the sea, in modern warfare. Nor can war industries be maintained without the myriad of industrial fabrics which go into essential war production. Nor can civilian morale be maintained without a sufficient supply of textiles to keep those on the home-front warm and reasonably comfortable. Consequently, the textile industry must be permitted to perform its job on those three essential fronts.

3. Solvency of the textile industry, as of all other basic and essential industries, must be secured if we are to have a solvent post-war economy. The 48-hour week order, with its inflationary time-and-a-half for the extra eight hours, is a defeatist move. We need the 48-hour week; possibly we shall need a 56-hour week. But we also need the abrogation of the penalty born in the depression, and no longer applicable than are any of the other depression-born regulations. Congress should repeal the provisions of the Fair Labor Standards Act. As for its effect on existing union contracts, the cry of labor organizations against such a step is a thin wail, when set against the ruthless, but necessary, acts of Congress and of administrative bodies, which pulled men —our boys—out of homes and jobs, without any regard for prior contractual relations, and sent them to the front to die or be wounded. If well-paid labor can't take this small sacrifice, as compared with that of those in the Armed Forces, it is just too bad.

4. Provision must be made for continuing the training of boys and girls in textile schools and other technical institutions. The future of the textile industry, as the clothing depot of our Army for the duration, and as the clothing depot of our own people and of the denuded peoples of the world after the war, will be dark if we do not set aside a portion of our manpower for training to become the overseers and technicians of the future. To do otherwise would be like a farmer eating up his seed peas.

FINALLY, what is needed most is a manpower policy which will be based on the principle that all men are equal—and that the man left at home in an essential war industry is as much a pawn in the chess-game of war as is the man who is sent overseas to fight, and possibly to die. That means a National Service Act—long over-due.

Douglas G. Woolf

THE EDITOR SAYS

Enough Textiles, But Not Enough

THERE ARE SUFFICIENT textiles on hand and in prospect to keep this nation reasonably well-clothed for the duration. But there are not enough to withstand the depleting effects of panicky buying such as we have witnessed since shoe rationing went into effect. No inventory can be large enough to weather that kind of a storm.

It is easy, and to some extent justifiable, to blame it on the cupidity of individuals. No one can hold a brief for the avid consumers who rushed in and bought everything they could find, regardless of their need for them. A sickening feeling comes into the base of one's stomach when he reads of wild-eyed women storming the shoe stores for "play shoes" when those shoes were exempted from the rationing program. It is not a pretty picture; it is a picture of the dark side of human nature.

But it does little good to rail at human nature. It does more good to examine the causes of this buying panic.

First, there was the fact that shoe rationing was put into effect without a sufficiently clear and forceful explanation that it was caused by a specific situation—shortage of leather—and that it was *not* the beginning of general apparel rationing.

Second, there were conflicting statements by high officials of WPB and OPA which made confusion worse confounded, and thus spurred rather than stemmed the panic.

Third—and infinitely more important than those first two contributing factors—was the public's misinterpretation of the survey by the Office of Civilian Supply of WPB, estimating the "bedrock" level below which it would be unsafe to reduce civilian supplies. It was assumed by the man in the street that the percentage quotas given in that survey were those to which the various industries would be reduced, whereas actually they were merely the irreducible minima established by OCS as the base line.

The moral is obvious: The people should be given the truth about civilian supply, but the truth should be explained clearly and beyond possibility of such misinterpretation as followed the "bedrock" survey.

The factors listed above were the immediate causes of the panicky buying of textiles. There is, however, a more fundamental cause which has not yet been attacked on all fronts. It is the existence of excess, and increasing, purchasing power. When so many people have so much money to spend and so little to spend it on, that sort of buying develops. The first answer is, of course, an immediate and drastic program of increased taxes and compulsory loans, to take out of circulation the menace of this money that is all dressed up and has no place to go. Such a plan would also help the individual because it would give him more security against post-war. The other answer is still greater resistance to demands from pressure groups, particularly organized labor and farm blocs, for increased wages and higher farm prices.

If steps are not taken on these fronts, the buying panic in textiles will be only the beginning of a series of buying panics, preceding every rationing program, real or imaginary. Rationing will be forced on products before the Administration is geared up to handle it.

No one underestimates the difficulties facing WPB and OPA in this whole question of civilian supply. The administrative officers deserve all the help they can get. Particularly do they need the basic help inherent in more constructive taxation, wage and farm-price policies.

A Group with a Purpose

In a stuffy hotel room, a group of non-stuffy people meet every six months or so. They are the executives—both paid and honorary—of the major associations allied with the cotton-textile industry. They represent a wide variety of interests: cotton weaving, rayon weaving, carded yarn, combed yarn, narrow fabrics, finishing, thread, North, South, and what have you.

They are called together by Dr. C. T. Murchison, president of the Cotton-Textile Institute—but after they get together they run the show. They explore all the major problems facing the industry as a whole and their own groups as parts of the industry. They pull no punches because their discussion is all off the record, despite the fact that a few friendly representatives of the press, including this writer, sit with them and join in their talks.

This type of gathering is one of the most vital steps ever taken by the textile industry. It is in line with this writer's oft-repeated call for a coordination of textile-association activities into a solid front for the industry.

It has more to go. It must expand to include other branches of the industry, other sectional and functional groups. It must progress from a discussion forum to an executive assembly, empowered to act for its individual associations. It must be able to focus the latent desire of all textile groups toward an all-out effort to win the war, in so far as the textile industry *can* win the war. Unless it goes that far, it will miss its mark.

But meanwhile, we can gain confidence from the fact that this degree of coordination has been attained. We can look forward to the day—very early, this writer hopes—when no group interest will transcend the dominant interest of going all out, textile-wise, to beat Hitler and Hirohito.

Today and Tomorrow

Too many people are trying to shut their eyes to the fact that we are in the midst of a revolution: a world revolution, a national revolution, an industrial revolution, an economic revolution. Too many people are harboring the sweet thought that, once we get this war over with, we can go back to things as they were, pre-war, and pick up from there.

Such hopes have been held in all previous wars, and always with disastrous results. This time, the penalty for that kind of thinking would be infinitely greater.

This global war, when it is finally won by the United Nations, will leave in its wake as guide-posts none of the old notions of class relationships, of economic trading, of industrial technique, of international politics. To try to maintain those outmoded concepts will mean merely another Hitler, another world crisis, another world war.

Somehow or other, this time the post-war problems of this frightful conflict must be met with a solution tailored to the needs of the world today and tomorrow, not to those of the world of yesterday, now gone forever.

Utilizing Manpower ★ ★ ★ ★ ★ ★ and Womanpower

The old saw that men, not machines, are the heart of industry—completely true as most old chestnuts are—takes on a new meaning in a nation at war. The manpower emergency is the crux of our all-out war effort.

Utilizing manpower and womanpower has become the No. 1 job of executive management.

With that in mind, we present herewith a series of articles touching on various phases of this problem: another step in *Textile World's* continued emphasis on human relationships. More articles will follow in subsequent issues.

Utilization of womanpower is nothing new in textiles. But many of its extended uses *are* new. Consequently this phase of the problem is high-lighted in this series, tied in with our front-cover. (Courtesy A. & M. Karagheusian, Inc.)

One word of caution: There is no excuse for hysteria. Mill managements should inform their employees on the folly of rushing out after "war" jobs, in reaction to the "work or fight" doctrine. Many textile jobs *are* war jobs. An apprentice in an airplane factory has much more chance of being drafted than a skilled worker in a military-goods textile plant.

Beyond that one restraint, no act should be left undone which might prepare this industry against the increasing depletion of manpower, and the increasing utilization of womanpower.

—Editor.

Workers For New Jobs Quickly

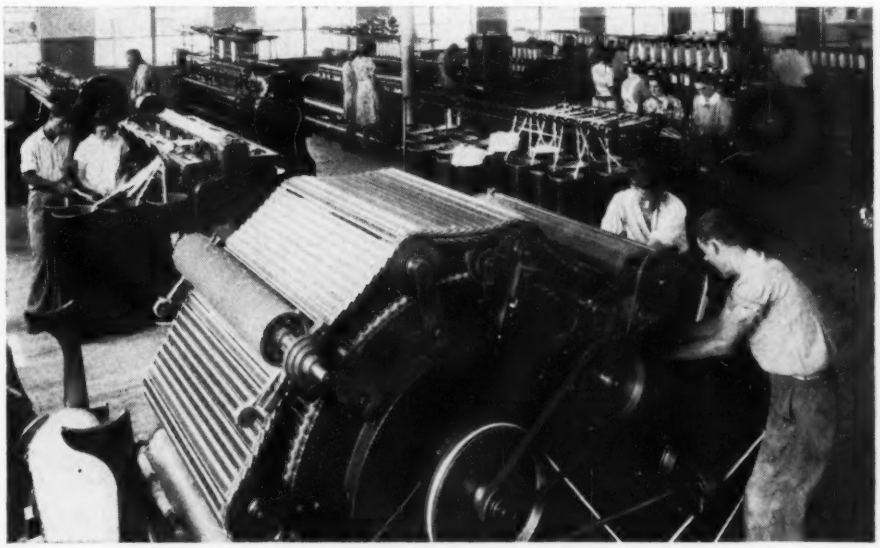
Vocational school and plant executives cooperate to speed training programs

OVER 1000 TRAINED TEXTILE WORKERS have been sent to the mills in the Greenville, S. C., area as a result of the close cooperation of local mill executives with the Parker High School vocational department. This has been a large factor in replacing manpower lost to the armed services or to higher-waged war industry.

Parker vocational training is conducted in the model mill that has long been an important part of the school. A vocational director and his staff of instructors carry on a full schedule of classes in cotton-textile theory and practice, both for students wishing a career in textiles and for people wanting to secure pre-employment training.

Mill executives have provided machinery in areas at or near their mills away from productive operations to permit many additional learners to be given training. Instructors for these classes are selected from men in the mill who not only know the job, but who can teach. These instructors are under supervision of the Parker vocational director. Funds to pay instructors are secured from the U. S. Office of Education as provided by the Smith-Hughes and George-Deen acts. To make this training more effective, a committee of mill executives assists the vocational director and his staff in co-ordinating the training program of the school with that of the mills.

Mill men in the Greenville area sponsor the vocational work conducted at Parker and in the isolated classrooms near the mills. Many men have been called into military service from these



Classes in carding and spinning at Parker High School have an increased enrollment of learners. Mills often call for learners before courses can be completed.

Classes in weaving at Parker furnish a constant stream of new employees. Loomfixing classes are also conducted here.

two learners can keep up a full assignment in six weeks to two months. According to their aptitudes learners should be able to handle full jobs efficiently in three to six months.

WOMEN ARE BEING TRAINED at Parker as doffers, roving haulers, sweepers, oilers, and other jobs not generally considered women's work. Loomfixing for women has been considered, and with fixing jobs broken down to remove heavy lifting it can be handled by women. Due to special training, experience and apprenticeship requirements it may be some time before women invade this field. In some quarters it is believed that 30 to 70% of the jobs in most mills can be handled by women. Coarse and medium yarn and weaving mills require more men, while hosiery and fine yarn mills can use more women. There is indication that the manpower situation may test this estimate in 1943.

mills, and these auxiliary classes have been an important source of replacement workers.

Candidates for the loomfixing classes are selected with special attention to previous training as weavers or other weave room jobs. Those selected for training are then instructed in the timing and overhauling of every motion on the loom. (In one instance, the instructor impresses the learners with the need for economy in the use of repair parts by taking them through the supply room, and telling them the cost of each loom part.) This supplementary training requires from 60 to 160 hr. instruction, depending upon the aptitudes of the students. They are graduated from these practical classes as quickly as possible, and are sent to the weave room for a period of apprenticeship under competent loomfixers.

These apprentice loomfixers are placed on "baby" sections of looms as soon as they have sufficient instruction, and continue their apprenticeship under the tutelage of an experienced loomfixer. Others may be assigned to help overhaulers on a "baby" section of looms. Gradually these loomfixers increase in efficiency until they can fix or overhaul a full section.

In the mills, other learners are being trained on productive machinery under the direction of the doffers, spinners, and weavers on the sections to which they are assigned. After a breaking-in period, learners are given a partial assignment to run. Learners are paid so that they can work 40 hr. and they are kept on the part assignments until their efficiency is good. In this way,

Class in loomfixing that is being conducted at the mill under Parker School guidance. These men were selected from the weave room for training.

★ ★ ★ ★ ★ ★ ★ ★ ★

Some mills are considering curtailment of third-shift and week-end operations because of serious shortages of skilled help. Although military fabrics and industrial fabrics are vital to the successful prosecution of the war, only a limited number of jobs in the mill have been designated as critical. This means that the men on non-critical jobs can be called when their draft classifications require it. Mills 75% or more on Government orders can manage this withdrawal in an orderly fashion by preparing manning table (TEXTILE WORLD, December 1942.) However, the problem of replacement is still present and to relieve this, all available resources of trained help must be tapped and, in addition, extensive learner programs must be inaugurated. Instructors for learner programs can be secured by cooperating with State vocational schools or by using Training Within Industry, Job Instructor Training described in TEXTILE WORLD, December, 1942. Training new employees for skilled or semi-skilled textile operating jobs can mean the difference between running a mill efficiently and serious curtailments.

48-Hour and Work-or-Fight Orders

Latter carries much more of a wallop than the former—Textile status clarified

WASHINGTON, D. C.

THE WAR MANPOWER COMMISSION is trying in two ways to hasten the movement of workers from non-essential industry to essential industry. One method is its declaration that men engaged in specified non-essential work after May 1 will be drafted, and the other is its attempt to release extra men from non-war industries by means of the President's order establishing a 48-hour week at the discretion of WMC Chairman Paul McNutt.

The chairman immediately applied the 48-hour week in 32 areas, including only a few textile regions: Brunswick, Ga., Charlestown, S. C., Macon, Ga., Mobile, Ala. WMC later found 102 areas in which a labor shortage is anticipated in six months, and stated that the order probably would be applied to them. Fifty-nine other areas are expected to show a shortage at a later date.

On Mar. 4 Frank L. Walton of WPB asked all textile mills to go voluntarily to the 48-hour week, three shifts. Many textile men regarded the move as impossible for many mills.

When the 48-hour order is analyzed, it turns out to be a fairly minor factor in the Administration's vast, but not-very-well-defined, program for squeezing the most war effort out of the nation's men and women. As the list of points of application shows, the affected area is limited. More important, a work week of 48 hours is already quite general in those areas, in civilian as well as war industries. The order gives WMC power to deal effectively with occasional exceptions.

Actually, the order does not require anyone to work a 48-hour week. It gets at firms which may not be working 48 hours by denying them the privilege of hiring any more workers without obtaining the specific permission of WMC. This means that short-hours employers will have to move along toward a longer work week as normal employee losses reduce their pay rolls. Until March 31, even an employer who wants to comply with the order is not expected to lay off any of his help except in so far as WMC, through the United States Employment Service, can find jobs for them.

The Office of War Information, stepping in to help clarify the order, added that firms in other than designated areas should go to the 48-hour week if by so doing they can reduce their labor requirements and not have to discharge workers now on their pay rolls. It reminded employers that all laws limiting the hours of work are still in force and overtime must be paid. All contracting Government agencies are authorized to see that their suppliers comply with the order.

BUT WMC's DIRECTIVE to the effect that men of draft age would be non-deferrable except when employed in war production carried many times the wallop of the work-week order. When reports reached Washington that numerous workers were leaving textile plants producing goods highly essential to the war and civilian welfare, Frank L. Walton, director of WPB's Textile Division, hurried into a meeting with WMC officials and brought out a clarification.

He published a statement in which he listed as the only non-deferrable textile *activities* the production of curtains, draperies, and bedspreads; pleatings, stitching, tucking and embroidery; trimmings, stamped art goods and art needle work; decorative feathers, plumes and artificial flowers.

Walton also listed as the only non-deferrable textile *occupations*: custom tailors, custom furriers, and operators of passenger and freight elevators.

The meeting was attended by representatives of the Army, Navy, Office of Civilian Supply, and the WPB Labor Production Division. It was recognized that manpower shortage is serious in the textile industry. It was discussed as a long term problem; more meetings were to be held, and no doubt further advice will be given by Mr. Walton.

"Essential civilian activities are on an equal plane with the basic war industries in our war effort," he said in his formal statement. "Registrants engaged in such essential civilian activities as agriculture, food processing, mining, textiles, transportation . . . " and so on "are equally protected with respect to occupational classification and dependency status as those engaged in basic war industries."

He explained that he did not mean that *all* textile production will finally be on the essential list. It is expected that a definite list showing deferrable and non-deferable textile occupations and activities can soon be issued.

Evidently WMC's directive was widely misunderstood, for Lawrence Appley, executive director of the War Manpower Commission, speaking before the American Management Association, laid further emphasis on the essentiality of textiles. He said that the textile industry was declared an essential industry by the Manpower Commission last July and by Selective Service in November, and that workers in this industry should not be stampeded by false reports into seeking other jobs. He called attention to Occupational Bulletin No. 39, issued by Selective Service System last Nov. 7, which explains the classification of textile workers and lists the critical occupations in the production of textiles.

It is recognized, of course, that not all workers who leave textiles do so in the belief they are fleeing the draft. Many of them go because they can take short training courses, or in some cases none at all, and earn more money in aircraft, munitions, and shipbuilding plants. There is no law against that, and at present there is none in sight. It is the textile industry's misfortune that the various war agencies, acting independently, have seen fit to negotiate contracts for various war necessities at prices which permit the payment of different wage rates for the services of persons of equal ability. But that is a problem that nobody is likely to solve.

People can still work where they want to, generally speaking. For months now there has been talk of an executive order, or a law that would tell them what to do, and where. But a national labor draft act never looked farther away than it does now. There are several bills before Congress, dealing with the principle of work or fight. Congress is being jostled between the inborn dislike of people for the regimentation that goes with any work-or-fight program, and the public desire to get along with the war and at the same time have a lot of workers told to stay on farms so everybody can eat.

Some Tips for Those Who Handle Men

Too much supervision worse than too little—Getting the worker's viewpoint.

By E. H. HELLIWELL

This is a piece about supervision. It deals with the one most important problem facing all industry today; how to develop a smoothly-running organization in the mill, and to keep it running smoothly. The author has no method or technique to sell; he is merely offering good common sense in human relationships. Put yourself in the other guy's place. Observe the Golden Rule. Don't sneer at modern gadgets such as charts and production records, but don't make a god of them. Utilize them to the extent, and no further, that they help toward efficient supervision . . . . . It's as easy as that—or rather as difficult as that.—*Editor.*

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SUPERVISION is like many other good things in life. Too much is worse than too little. Too much supervision savors of petty persecution and perpetual nagging. It destroys initiative, stifles independent thinking, kills the joy of accomplishment, takes all the interest from the job, and places the supervisor in the position of a Simon Legree with a big whip, instead of showing him in his true position as a friendly advisor, instructor and leader. Balanced supervision is a happy medium between too much and too little. Clear, concise instructions on what to do and how to do it are worth more than admonitions and warnings of what not to do.

There are two broad divisions of supervision: theoretical and practical. Theoretical supervision is an inspirational ideal, glowingly described in perennial pep talks, but seldom attained and never long maintained. There is a concealed paradox in this mythical, utopian super-state, because under truly ideal conditions, no continuous supervision of any kind would be required. Practical applied supervision is a reasonable compromise with this ideal and is that degree of balanced supervision which experience has proved can be consistently attained and constantly maintained with a reasonable expenditure of time, effort and money.

Practical supervision may be divided into two types: random and systematic. Random supervision detects and corrects errors, faults and failures in a haphazard, hit-or-miss manner. Systematic supervision prevents a great many errors and faults and is therefore required to correct very few failures in execution. This is accomplished by the orderly listing and arranging of records, plans and schedules covering all details that past experience and present knowledge indicate are probable points and causes of failure.

The supervisor selects, instructs and directs his co-workers, inspects the results of their work, detects and corrects any errors, faults or failures in materials, methods, operation or the finished product. Briefly stated, he must analyze, organize, deputize, scrutinize, criticize, very rarely penalize, but continually harmonize.

He may have the local designation of foreman, department manager, overseer or plain "boss." If he is a real supervisor, his men work with him, not under him. What his men think of him is as important as what he thinks of his men. What they both think of the "big boss" is as important as what the "big boss" thinks of them. All these reciprocal viewpoints and estimations must be favorable if efficient department operation and successful plant management are to be achieved and maintained. There must be a four-lane highway clearly marked Esteem, Respect, Loyalty and Mutual Confidence between the management, executives, supervisors and workers.

IT MUST BE ADMITTED that the pioneer age of industry produced some great rule-of-thumb, under-the-hat supervisors. While experience may ripen judgment, it is no guarantee of efficient supervision. Knowledge of basic principles and the correct methods in the practical application of these principles are both essential. This is a keenly competitive age with many economic, personnel and legislative limitations, traps and handicaps. The old type of supervision can not meet successfully the present-day requirements for efficient department management. Written instructions, records, plans, charts and schedules are necessary in all phases of supervision whether applied to personnel, maintenance or production. There is too much important and essential detail in all departments today to be carried under the hat.

Many supervisors consider all records, with the possible exception of the payroll, as a waste of good time that could be better used in a more profitable way. This attitude may be justified in many cases where masses of irrelevant, unessential records are required to be kept. The value of any system of control or operating records is not measured by the number of detail items which it may contain, but rather by the amount of detail which it can omit without impairing its effectual control. This simplication of records, reports and schedules can be carried to the point where they are actually time and labor savers instead of wasters.

An important part of every big-league ball game is the score board. Not one item is recorded that is not pertinent to the game being played. It is an up-to-the-minute record to the last ball or strike. The supervisor's score board should be as free from irrelevant data and should give his and his team-mates' standing in the production game. Suitable records enable him to keep his department score. His department errors may be chalked up against him, but he need not wait for a ninth inning rally to make a home run.

A bearing failure from lack of proper lubrication is just as surely a warning as "three strikes and out." A strike-out may not mean the loss of the game, but a bearing failure certainly means the loss of much valuable production. Correct lubrication and inspection schedules would prevent all bearing failures from lack of oil or other causes. Organization, maintenance, operating and processing plans, charts and schedules would prevent failures of other kinds all along the line. The direct relation and importance of written plans and records to efficient supervision can be readily seen.

THE SUPERVISOR'S EFFICIENCY is often limited by his ability effectively to divide and deputize secondary supervision to his assistants or by the ability of these assistants to assume and successfully execute this delegated supervision. The supervisor is paid and given credit for what he gets done as well as what he actually does himself. The supervi-

sion and authority may be divided, but the ultimate responsibility for successful department operation is still his problem. Once again suitable records of job analyses, routine schedules, and organization charts clearly outline the functions of each assistant and furnish a check on his sectional supervision.

Waste of time, effort, supplies and materials are problems that a supervisor must continually face and overcome. There is a distinct difference between waste of time and wrong use of time. The waste is deliberate and can be corrected by proper discipline. The wrong use is usually unintentional and is due to poor organization, improper supervision or lack of suitable instructions, plans or schedules.

Every supervisor should establish for himself a reputation for fair dealing and an unswerving application of the Golden Rule. The modern perverted version of the rule, "Do others before they do you," will not bring happy results to either the supervisor or the management.

The open and intelligent discussion of all real or fancied minor grievances should be encouraged by the supervisor. Whenever possible he should include himself as a party in the discussion. These minor grievances if ignored and left to smolder are sure to break out again, spread and increase in size and importance until the blaze of a real major grievance develops. Turn on the stream of free and open discussion. Cool reasoning and mutual understanding will take the heat out of the dispute and the blaze dies out for lack of fuel.

Cooperation among the departments is as essential for successful plant operation as cooperation among individuals in efficient department operation. Every supervisor's job will be made much easier and more effective if there is complete cooperation between him and his fellow supervisors. The highly developed American skill in the science of buck-passing should be replaced with the realization that the objective of all supervisors is the same: efficient department supervision — automatically bringing successful plant operation.

A review of all departments, in all plants, will reveal that they have one problem in common: that is "to achieve and maintain the greatest possible degree of uniformity in all materials, processes and products." This is a big problem stated in a very simple manner. Its successful accomplishment requires constant vigilance and careful supervision from the raw material to the finished product through all the departments of the business.

There is no such thing as absolute uniformity. There is always some degree of variability present. One authority (Secrist) on this subject states, "Everything in the universe occurs but once; there is no complete sameness of repetition. Things which we term 'causes' will be accompanied or followed by another group of like, but not absolutely same, things which we term 'effects'."

The supervisor should not be discouraged by the impossibility of reaching the goal of absolute uniformity. Quality factors in department products may vary without apparent cause. He may however be assured of one absolute certainty, i.e., the nearer his 'causes' in department processing approach true uniformity, then the more uniform will be the 'effects' as shown in his finished product.

SAFETY AND ACCIDENT PREVENTION form an important part of every supervisor's duties. Constant vigilance is required to prevent or correct any unsafe mechanical or operating condition. An analysis of the causes of accidents will show that unsafe practices, personal attitudes, inattention, and disobedience of rules are the major causes, rather than existence of any machine or operating hazards. This means that the achievement of accident prevention lies in education and instruction of the worker.

Discipline is necessary in all departments. Self discipline is as important as group discipline. The supervisor should first apply discipline to himself before applying it to others. Every one in all departments should be made to realize that rules and regulations are made and enforced for the benefit of every worker in the plant. Reasonable discipline protects the honest, considerate worker from the dishonest, inconsiderate worker assures fair equitable treatment for all, and promotes department efficiency.

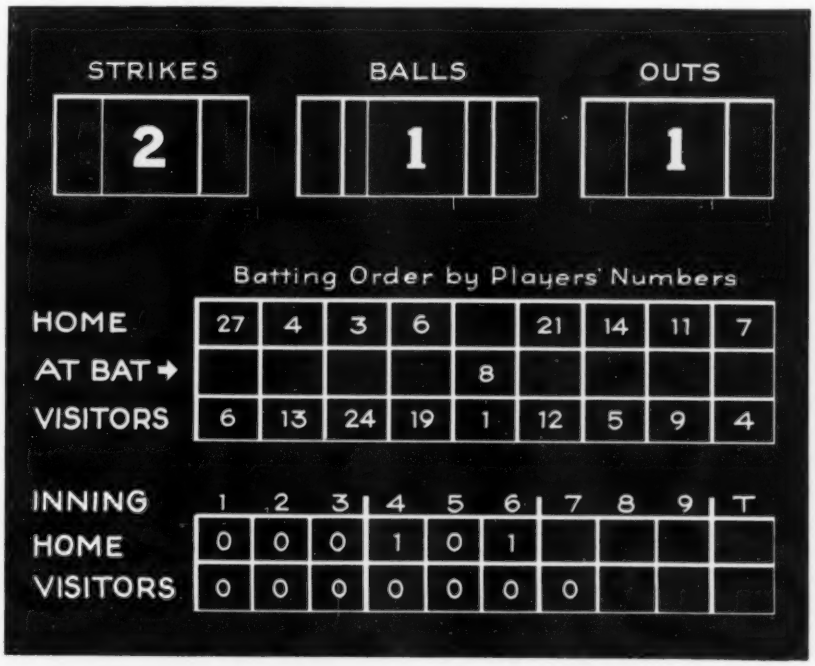
There are many books, lectures and courses offering short cuts to successful foremanship and supervision. There *are* no short cuts. Many of the instructions and rules given are vague generalities and the authors shrewdly avoid any applications of their stated principles to the solution of specific present-day industrial, technical or personnel problems.

All the available knowledge of ethics, economics and metaphysics will not aid a man to become a successful supervisor if his knowledge of the technical requirements of his position is uncertain or insufficient.

The first and most important step toward successful supervision is to learn all the technical details of the job by observation, study, experiment and discussion with other supervisors in similar positions.

Compile all this information in suitable form so that it is quickly available for use by the supervisor, his assistants, or other qualified members of the organization.

The essential importance of this all-essential requisite for efficient supervision is generally overlooked in the short-cut royal-road literature relating to successful supervision.



"The supervisor's score-board should be as free from irrelevant data as is the score-board in a big-league ball game. It should give his and his team-mates' standing in the production game."

Assigning Card-Room Jobs to Women

Time studies and analysis of tender's work show how to save manpower

By E. H. HELLIWELL

THE PRESENT SHORTAGE OF MALE WORKERS and the immediate prospects of a still greater scarcity leave but one course open to mill management. This is the employment of women on jobs, or parts of jobs, now performed by men. There are many jobs, in all parts of the mill, that have always been considered as suitable for men only. There may be parts of these jobs that do require physical strength and abilities not possessed by many women. On the other hand, there are also other parts of the same jobs that can be performed easily by women.

Full utilization of the available supply of women workers calls first for the breaking down of many jobs into the elements or functions which can be performed by male and female employees. Next these elements are rearranged and rebuilt into new jobs—some for men and some for women. This process of breaking down old jobs into functions and rebuilding the functions into new jobs requires an exact knowledge of the time values of all job functions in both the new and old jobs. Simplified time studies will provide all the necessary information regarding the time values of job elements, permit an acurate analysis of present jobs, and indicate the number of male and female workers needed for the new jobs.

The simplified time study is different, in one respect, from conventional time studies. That is, the time value of each job element is measured, and not the effort of the worker. The chief advantage of this method is that it permits a standard time value to be established for each job element. Individual job unit values can be readjusted without affecting other unit values. Unit elements of the same or different jobs can be combined to form new jobs. The standard time value of each job element multiplied by the frequency of its recurrence equals the total time value of that unit element in the complete job. The effort and job rating of individual workers need not be given much consideration, as the personal rating takes care of itself when job elements are performed within the established standard times.

The persons selected to make the simplified time studies need not be endowed with the mathematical genius of an Einstein, but they should have a good knowledge of the requirements of the jobs analyzed and of the functions or elements making up each job.

A stop watch will be found convenient for timing; however, an ordinary pocket or wrist watch can be used, and close precision can be obtained by timing a group of the same elements instead of a single unit; for instance, by taking the time to doff 10 cards, creel 20 laps, or strip 20 cards and dividing the total time by the number of units thus timed for the standard time of each unit. When an operation is being timed, care should be taken that the operative is maintaining a fair, normal rate of speed for each job element—there should be no speeding up and no loafing.

THE JOB OF A CARD TENDER affords a good example of the way in which a job can be broken down into elements, and the elements analyzed and rearranged into new jobs utilizing male and female workers. The details given below apply specifically to card tender jobs, but there is no reason why the methods cannot be so modified as to apply to many jobs now performed by male help exclusively.

Assume as a basis of job assignment, a card room of 208 cards, 8 of which are grinding, leaving a net of 200 cards operating. Each tender on a regular job takes care of 20 cards complete, including all doffing, stripping, feeding, oiling, cleaning, sweeping and waste removal. A total of 10 card tenders is required. Because of the nature of some of the tasks, only male tenders are employed. The accompanying table shows a card tender's job split up into related units and each unit designated as suitable for male (M) or female (F) workers. An 8-hr. day consists of 480 min.; deducting 20% for rest time leaves a net operating time of 384 min. This is the basis on which all job sizes are figured. (Note: Rest-time allowances may vary for different types of work, but a blanket rest factor of 20% is fair

Analysis of card-tending job showing elements, time values, and functions assigned to male and female workers.

Job Element	*Male or female*	*Stand. time in min. 1 card*	*Repeats in 8 hr.*	*Total time in min. 1 card*	*Net work time in min.*	*Hands req. 1 card*	*200 cards*	*Job assignment 200 cards*
Rack lap	M	0.42	2	0.84	384	0.0022	0.44	1 Male
Creel lap	M	0.45	2	0.90	384	0.0024	0.48	
Strip card	M	0.82	2	1.64	384	0.0043	0.86	1 Male
Assist stripping	M	0.82	2	1.64	384	0.0043	0.86	1 Male
Assist stripping	M	0.82	2	1.64	384	0.0043	0.86	1 Male
Clean	F	0.55	2	1.10	384	0.0030	0.60	
Sweep	F	0.43	2	0.86	384	0.0023	0.46	
Oil	F	1.20	1	1.20	384	0.0031	0.62	4 Female
Remove flat strip	F	0.24	3	0.72	384	0.0019	0.38	
Remove fly waste	F	0.65	1	0.65	384	0.0017	0.34	
Patrol & attention	F	0.24	8	1.92	384	0.0049	0.98	
Doff cards	F	0.40	8	3.20	384	0.0084	1.68	2 Female

and reasonable for all units of a regular card tender's job. With the rearrangement of job functions, additional rest allowances may be advisable on the more difficult tasks, such as stripping and lap creeling.)

Examination of the table of job elements shows that out of a total of 10 workers required, only 4 male workers are necessary, and the balance of the work can be performed by female workers. This releases 6 men for other work not suitable for women.

It will be noted that in no instance is the sum of element values performed equal to the number of workers assigned to the job. This time margin leaves an allowance for incidental work, such as lap trucking, waste disposal, general cleaning, and other tasks. The assignment of these minor tasks will depend largely on the present department job organization.

EFFICIENT PERFORMANCE of the lap creeling job requires that laps run out in successive order on adjacent sections. This is best accomplished by creeling 1/8 of the total 200 cards, or 25 cards, at 30-min. intervals on consecutive sections. This plan will bring the lap creeler around to each card in 4 hr., which is the running time of the lap. The specialized tenders on their patrols will maintain laps in proper operation after they have been put in by the lap creeler.

Stripping of cylinders and doffers is best done by a crew of three men—two men to strip; and one to stop, start, and piece up cards. Each member of the crew should alternate on the piece-up job. This plan equalizes the work done by each man in the crew.

Four female tenders are assigned to 200 cards. This means 50 cards to each tender. No creeling, stripping, or doffing is required of these specialized tenders. A plan of systematic patrol and attention to backs and fronts will assure proper operation of feeding and delivery.

In some mills different arrangements than the one shown in the table may be desirable. One optional plan is to have tenders do the doffing on their own cards. This would increase the number of tenders to six, eliminate doffers, and reduce the number of cards ended by each operator.

The rates to be paid on each newly assigned job will depend on present department ratings and labor restrictions. As a general rule, specialized card tenders and doffers should be paid about the same as draw-frame hands. Lap creelers and card strippers should receive slightly higher rates than those paid for regular card tenders.

100,000 Women Needed

in 1943 to replace men in textile mills

TO ESTIMATE how many men the textile industry has contributed to the armed services of the country, TEXTILE WORLD received the cooperation of nearly 100 mills employing 15% of the total employed personnel in the industry. These mills, which together employ about 190,000 persons, reported that the stars on their service flags totalled 23,000, or 12% of their payroll. On the basis of a textile industry total of wage earners of 1,275,000 (WPB's currently used figure), this service-star percentage indicates that 153,000 textile workers are now in the services.

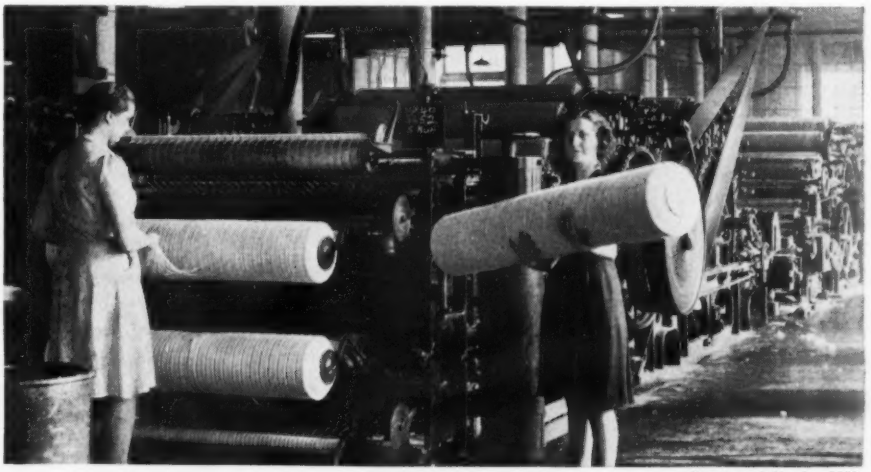
Because the textile industry employs in normal times more women than men (1940 figures were 48½% men, 51½% women), the 12% which has gone into the services is in fact a much larger percentage of the eligibles, being about 25% of the men normally employed. In other words, one out of four male employees has already left the mill for active war service. This gives the country about 153,000 soldiers, sailors or marines who were formerly more familiar with spindles, shuttles, knitting needles or dye vats than with the more sinister machines of modern warfare.

If we assume that the vacant jobs left in mills by these 153,000 men were filled during 1942 50-50 by men and women, there has already occurred a spread of 12% between the normal percentage division of the industry, giving for the end of 1942, 42½% men and 57½% women.

Mobilization continues, and if the armed forces rise to over 10,000,000 men by the end of this year from some point around 6,000,000 where they may be now, an additional 8% of textile workers will be inducted if the law of averages holds. This will mean a total of about 40% of the men mobilized, or the loss of an additional 105,000 men throughout the industry during 1943. This estimated group will be replaced nearly wholly with women, a fact that will lower the percentage of men in the industry to about 34% by the end of 1943, and correspondingly raise the percentage of woman to 66%.

This addition of 8% of women means the recruiting and training of about 100,000 individuals during the course of 1943 in the industry as a whole.

Going back to 1940 statistics, the percentages of women out of total employed in each of the different branches of the textile industry was as follows: 67% in knit goods manufacture, 55% in silk and rayon manufacture, 49½% in wool manufacture, 47% in cotton manufacture, 40% in all other (including finishing), and 51½% in the grand total of all textile workers. Based on taking 40% out of the group of male workers in each of these industry branches and replacing as indicated above, the percentages of women in each of the various branches will be increased by the end of 1943 to something near the following figures: 77% in knit goods, 68% in silk and rayon, 65% in wool, 63% in cotton, 58% in all other and 66% in the grand total of all textile workers.



Courtesy Arlington Mills

Girl doffers removing jack spools from woolen card in cardroom of Arlington Mills, Lawrence, Mass. This operation was formerly done by boys in this and other mills.

★ **Utilizing Manpower and Womanpower**

War Production Can't Be Blitzed!

Education, not hysteria, found to be real output incentive in Britain

In our Plant Protection Issue last July, one of the four major subjects we covered was "protection against let-downs": the development of morale to boost production. This is the subject which Mr. Chirurg studied on a recent trip to England. He reported his findings at a meeting of the Textile Society of Canada Feb. 27; the attached article is an abstract of that speech. British experience should be of great help to us.—*Editor.*

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By JAMES T. CHIRURG

President, James Thomas Chirurg Co., Boston

THIS CONCLUSION is to be drawn from the study I made in the leading manufacturing centers of England: Printed and spoken words—the right ones—can be used to increase production. England has proved it, and England today has the highest per-capita production of any of the United Nations.

Her experience has shown that to get results, material addressed to war workers must be: (1) truthful, (2) specific, (3) newsworthy, (4) human. If it fails consistently in any one of these four characteristics, it may do more harm than good.

What we called "War Production Drives" in American industry, have in England evolved into broad, coordinated educational programs, for *all* war workers—plant, clerical, managerial—describing *what* is going on and explaining *why*. Information, rather than inspiration, is the keynote.

England has found that production should not be a subject for hysteria. Intensive effort to break production quotas sometimes defeats its own purpose and can be followed by unfavorable reactions. Straining for increased output is often followed by a let-down, or by increased accidents or absenteeism.

A well-prepared and continuous educational program, on the other hand, creates a good feeling throughout the plant because it gives the worker a clear understanding of his place in a nation at war. Production is pushed up —more slowly, it is true, than by more sensational methods—but it can be kept there more consistently and with less danger of bad after-effects.

The British are using many methods at the present time to build worker morale, some of which might be successfully adapted for use in American war plants. Some of these are already in use but not to the extent that they have been developed in England.

For example, it has been found that informal talks by men back from active duty, telling of their own experiences, in their own language, direct to the workers, are more effective than management tours by ordnance and procurement officials. Visits by service speakers have had tangible results on production. Many of the firms which they have visited have reported immediate results.

Groups of workers are also sent to visit Fighter-Trainer stations of the R.A.F. The trip is made as a reward for outstanding work in cutting down scrap, absenteeism, etc. The workers talk to their fellow-workers enthusiastically about the visit for weeks after their return, and they bring back first-hand information about the base and about the product they are making in many cases.

For smaller plants, especially where it might not be practical to send actual service speakers, the Minister of Aircraft Production makes available dramatic recordings by pilots telling of their own experiences on patrol or in combat. These are broadcast to workers, usually during mealtime, and get good response. This is but one instance of England's effective use of the public-address system in the plant morale program.

Britain has found that the right poster, in the right place, at the right time, has definitely produced results. But posters must possess the same four characteristics as all other effective material they must be specific, true, newsworthy and human.

Posters that present a particular type of plane, tank or other piece of equipment, on which the product of that particular plant is used, are very successful. A photograph of the part made in the plant is superimposed so that the workers can identify their own work. News flashes reporting the achievements of these weapons or current action in which they took part are often shown with these posters.

Many outstanding results have been noted from the use of production charts or targets. But they are more successful when they are confined to one particular part of the general production program, such as reduction of scrap, etc.

As part of the general educational program for war workers, special traveling exhibits have been set up by various Government agencies in trailers. These tour important manufacturing centers stopping at various plants.

Because of the paper shortage, some factories have made use of the bulletin board to publish a plant newspaper or house organ. News of social events or personal items of interest to the workers and photographs are posted on the bulletin board.

Films are used in British war plants much more extensively than they have been up until now in American plants of a similar size.

If Britain's experience with production in war plants is to be used as a guide—music in industry is here to stay. Music is used very generally in the factories. It has been proved that music can act as a tonic to workers, relieve boredom, increase happiness, improve health, minimize conversation during working hours, relieve the nervous strain induced by long hours, reduce absenteeism—and so increase production.

Some of these methods, as I have already indicated, are now in use on this side of the Atlantic, but not to the extent that they might be in order to reach and maintain peak production in our war plants.

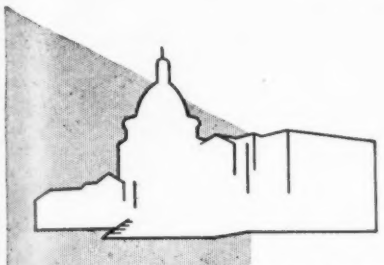
On the other hand, we have some lessons to learn from England's experience with war worker production programs, which should make us look with a more critical eye at what we are now doing. We must, above all, abandon the constant straining for new competitive incentive schemes. Intense "production drives," unless they are short and directed at one specific problem affecting production, may defeat their own purposes in the long run.

In other words, War Production can't be blitzed!

But England has proved that war industry and government and military officials working together in a program to provide continuous information to workers on the results of their efforts can increase per-worker production.

Act to Stem Textile Supply Panic

Effect of food and shoe rationing brings all Washington officials into action



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E. H Martin — Malcolm Burton

By BLAINE STUBBLEFIELD

WASHINGTON was somewhat disconcerted when it saw people go into a dither about shoe and food rationing. Officials are stepping lively to forestall hysteria about textile products. And here is what they did, almost like firemen answering five alarms:

Donald Nelson stepped forward to say there will be no clothes rationing during the first three quarters of this year, but he made no guarantees for the last quarter and for 1944.

For the first time since the war textile drive started in 1940, the Army and Navy both said, on Washington's birthday, that they were ready to ease their ravenous demands for textile supplies.

The Office of War Information broke out a WPB statement that in spite of increasing military needs for wool, civilian Americans can look forward to next fall and winter with confidence that they will be warmly—*and fashionably*—clothed.

In their haste the boys had not had time to compare notes, but the confusion was not bad, by Washington standards, and considering that a newly self-assertive Congress and 50,000,000 women are ready to jump on anybody who makes a mistake.

But the men in the Capital who write the program for your industry were not caught entirely flat-footed. They had already taken steps to satisfy civilian demands. Frank L. Walton, director of the WPB Textile Division, had wired 519 cotton mills, urging them to increase production of cotton fabrics and yarns "to the maximum levels possible." He said that, "while military requirements have first call on textile output, fulfillment of essential civilian needs is of equal importance.

Thomas Bancroft, chief of the cotton branch announced, through the Office of War Information, that "plans for additional production of 200,000,000 yd. of certain types of cotton fabrics annually were presented at a meeting of the Cotton-Textile Industry Advisory Committee." He also predicted that fabrics unimportant to the war program or to the maintenance of a sound civilian economy would be curtailed or eliminated.

Kenneth W. Marriner, chief of the Wool Branch, stated that, at a meeting held with a technical committee, plans were discussed for stepping up production of wool fabrics to insure adequate supply of warm and durable clothing.

And, breaking down the Army's insistence upon stockpiling wool against possible stoppage of shipping by submarines, the War Production Board doubled the quota of wool for the manufacture of fall and winter goods, making available an additional 75,000,000 lb. for civilian fabrics.

BUT OTHER MEANS OF meeting the vast military and civilian and lend-lease demands have not had such decisive action, and one of them is standardization and simplification of clothing and textiles. You can ask as many section bosses in WPB and OPA as you can find in a day, and at the end you will conclude that there may be several simplification programs in their desk drawers, but that there is no agreement on which one is to be put into effect or when. The next over-all authority above WPB and OPA, which could set up a simplification office, would be Jimmy Byrnes, chief of the Office of Economic Stabilization.

On March 8, WPB took another step toward simplification by amending order L-99 to include standard print cloths and class C sheetings as well as osnaburgs and class A and B sheetings. The order requires that specified looms weave only the fabric constructions listed (there are 10 categories). Time is given for conversion where necessary. WPB estimates a 10% increase in production of the looms involved, or 230,000,000 yds. more annually than without the simplification. In general pickage is reduced somewhat to arrive at faster weaving fabrics. Market reaction was favorable.

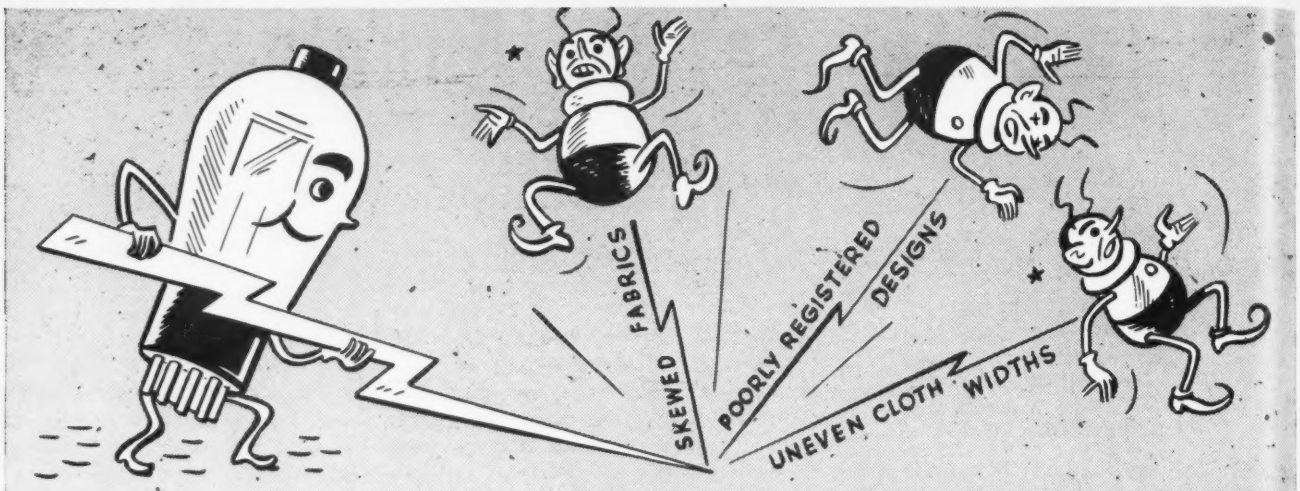
It is possible that further simplification might be carried through the war without any separate organization. OPA has authority to set up minimum constructions that may be sold for a specific price. It has already done this with the two famous 64 x 60 print cloths.

These two new cotton fabrics are not mandatory and are designed for commercial and for industrial uses. The commercial cloth is a 42-in. 64x60 print cloth of approximately 4.60-yard weight, made with 30s warp yarns and with 30s warp-twist filling yarns. The new industrial fabric is a 42-in. 64x60 print cloth of about 4.25 yard weight made with 28s warp yarns and 28s warp-twist filling yarns. The industrial cloth may be a possible replacement for 80x80 print cloth for laminating purposes or it may be used as a replacement for other print cloths which have become scarcer.

The War Production Board, with its control over production, has issued many orders limiting the use of cloth in clothing. Recently it told manufacturers what kind of knitted fabric they can use in knitted underwear. At this writing CAB was about to issue similar orders on other fabrics. It will be WPB that tells textile producers when they must not make fabrics narrower than the capacities of their looms.

Textile manufacturers may well conclude from all this: (1) that the armed services at last show signs of reaching a plateau in their demands; (2) that any curtailment of military work will be more than offset by increased allocations to civilians and to lease-lend; (3) that they will be told increasingly just what goods they can make and how much.

Despite all of Washington's effort to reassure the public, some of the experts are figuring the civilians' share of textiles this year as low or lower than their consumption at the bottom of the depression, which is said to have been at the rate of five billion yards. From here, the prospect doesn't look that bad.



Electronic Tube Drives the Gremlins from Your Mill

It removes skew and straightens the filling in piece goods.

It detects errors or flaws in printing fabrics.

It maintains uniform cloth widths.

It provides constant tension on yarn or cloth.

It prevents damage in shearing.

It measures and records colors.

It actuates safety devices.

It controls motor speeds.

It opens and closes doors.

It guards plants against intruders.

It is ready to aid textile manufacturers in many other ways.

New Servant for Textile Mills

Electronic equipment proves versatility by performing many important duties

By A. P. MANSFIELD
Industrial Engineering Dept.
General Electric Co.

INCREASING INTEREST is now evident in the part that electronics is playing, not only in making war combat equipment better, but in contributions to more efficient industrial operations. The purpose of this article is to outline and describe briefly some electronic developments of interest to the textile industry.

The essential part of an electronic device is the "electronic tube." This is a generic term, applied to various designs of tubes consisting of two or more elements in a container, usually glass, and having a high vacuum or filled with gas at reduced pressures. In a broad sense, electronic tubes may be considered as electrical valves, susceptible of very precise control of flow of current.

The two general divisions of electronic tubes are: (1) the thermionic tube which gets an impulse from electric voltage produced electrically, mechanically, or chemically, and (2) the light-sensitive tube which gets an impulse from a beam of light. Both of these divisions have vacuum and gaseous or vapor types. According to their function in a circuit, the types are known as amplifiers, rectifiers, and oscillators. According to their structure or the number of elements in the bulb, they are known as diodes, triodes, tetrodes, and pentodes.

Industrial controls employ many tubes and circuits identical with those used in a modern radio receiving set. These are often supplemented with others designed to meet specific control requirements. A description of these is given below in connection with their application.

ELECTRONIC MOTOR CONTROL. From the standpoints of universality of application, range of control, and reliability of performance, electronic control for adjustable-speed motors might well be considered the electrical analogue of

the oil-pressure governor for the steam turbine. Either can be actuated by almost any changing condition that definitely represents the performance desired. Many successful installations on a diversity of applications attests to the high degree of reliability of both systems.

Whenever motor drive and wide range of speed adjustment are required, due consideration is bound to be given to the adjustable-voltage, or Ward Leonard system. This system requires apparatus, independent of all other machines, to furnish the adjustable voltage to meet the requirements of a particular drive. Where the available power supply is direct-current, a generator is necessary to provide the full power requirements at the adjustable voltage. With a-c. power supply, similar generator equipment may be used, but for outputs up to 10 hp., electronic tubes provide an excellent means for obtaining the full adjustable-voltage power without any rotating machinery. (It should be noted that 10 hp. capacity is limited to 550-volt motors.)

THE THYRATRON TUBE is a hot-cathode, mercury-vapor rectifier incorporating a control electrode or grid. For a given plate voltage there is a particular grid voltage at which ionization will just occur and the tube become conducting. It will then pass current as long as this anode is positive with respect to the cathode. Once the anode current is started, the grid has no appreciable effect on it. The grid cannot limit or stop the flow of current, but can regain control to keep it from starting again if the flow ceases long enough for the mercury vapor to deionize.

If an a-c. voltage is applied to the anode, the grid has an opportunity of regaining control once each cycle, and it can delay the start of the arc for as long a period during the cycle as the grid is sufficiently negative. Therefore, if the grid, as well as the anode, is supplied with an a-c. voltage, the output of the tube can be changed by varying the phase relationship between grid and anode voltages. This phase shifting is accomplished by means of an inductive-resistance bridge.

In the Thy-mo-trol system all the advantages of thyratron speed control are packaged, with means included for starting, stopping, protecting, and accelerating the motor. A schematic circuit diagram showing connections between the motor and the equipment comprising the Thy-mo-trol system is given in Fig. 1, and the equipment is illustrated in Fig. 2.

Basically, the Thy-mo-trol system employs two pairs of thyratron tubes to convert a-c. to d-c. and supply controlled armature voltage and field current. The single-dial, stepless speed control varies the armature voltage for speeds up to "basic" and field current at speeds above "basic."

The Thy-mo-trol constant-speed characteristic maintains a pre-determined motor speed within close limits and is independent of load and ordinary line-voltage variations. Rapid acceleration is accomplished by automatically increasing the armature voltage until "basic" speed is reached and by field weakening at speeds above "basic." Dynamic braking is available for rapid deceleration of high inertia loads.

Motor protection, both during acceleration and on overloads, is brought about by automatically limiting armature current. Whenever a sustained overload exceeds the torque value for which the system is set, quick-acting circuits perform as follows: (a) strengthen the field; (b) if the load is still too great, reduce the armature voltage; and (c) if the overload persists, limit armature current with the motor stalled until the overload relay acts.

Applications for single-motor drives with these adjustable-speed characteristics are extremely varied. In special cases where even more exact speed control is necessary, a pilot generator driven from the motor shaft may be added to control the thyratrons and correct for any speed deviations.

Where two or more motors are to be operated in tandem with speeds held in step over a wide range, the Thy-mo-trol system provides a particularly satisfactory control. Here, a separate thyratron is employed for the field of each of the follower motors, and these in turn are controlled automatically through compensating gates or otherwise to keep the motor speeds in step.

In the winding of yarn on beams or the batching of cloth, Thy-mo-trol supplies power and control for the winding motor for constant tension, or the tension characteristic may be modified from constant tension to suit characteristics of the material being wound.

THE IGNITRON TUBE is a gas discharge tube, similar to a thyratron tube but with a pool-type (usually mercury) cathode, in which an ignition electrode

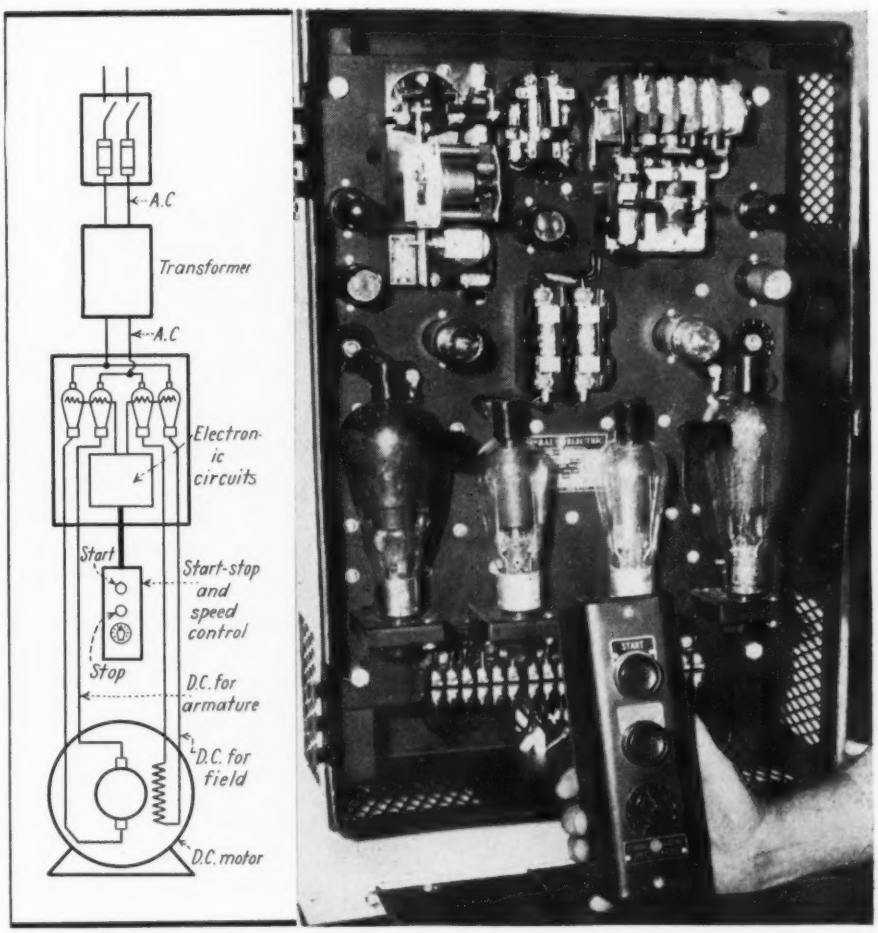


Fig. 1. Schematic circuit diagram showing connections between motor and equipment comprising Thy-mo-trol systems. Fig. 2. Control station, transformer, and thyratron tube panel comprising Thy-mo-trol system of electronic motor control.

Fig. 3. Photoelectric equipment is tied in with a small gear motor which opens and closes the door in shipping department of a large southern plant; incoming or outgoing shipments approaching the door cut light beams focused on phototubes thus starting door-opening mechanism.

is employed instead of a grid to control the starting of the uni-directional current flow in each operative cycle.

In the stroboscope, developed to detect color register, flaws and errors in high-speed cloth printing, high-current ignitron tubes with electronic control are employed with fluorescent lamps to provide intense light flashes of extremely short duration. These, when timed in synchronism with the frequency of pattern repeats, serve to illuminate the pattern at only one point in its travel and thus produce the optical effect of making it stand still. The use of electronic control provides the very short time constants required for stroboscopic action and furnishes means for synchronizing the light flashes with the pattern repeats. Patterns are made distinctly visible at speeds ranging from 100 to 450 yd. per min.

THE PHOTOTUBE or photoelectric tube is a two-element, light-sensitive device which depends for its operation on the emission of electrons from a light-sensitive surface; i.e., light liberates electrons from the sensitive cathode. If a source of potential is applied to the tube to make the cathode negative and the anode postive, the negatively charged electrons will be attracted to the anode. Thus, we have a means of producing minute currents which are susceptible of amplification and definite control.

The photoelectric relay is operated by the action of light on a phototube. The energy released by the light striking the phototube, although extremely small, is as definite and controllable as that obtained from the more usual operating means—as controllable as electric volate or current, or gas or liquid pressure or temperature. Some photoelectric relays operate on the absolute value of light; others depend on the rate of light change.

One of the more commonly seen applications of the photoelectric relay is to the opening of doors. A relay with suitable light source is placed either side of the door and arranged so that a person or other moving object will interrupt the light beam when approaching the door. This starts operation of the door-opening mechanism and holds the door open until the moving object has passed beyond the light beams.

As a result, not only are operating time and costs, as well as heat losses, cut to a minimum, but also comfortable working temperatures for employees are easily maintained. A typical application is shown in Fig. 3.

Register problems involving the positioning of the edge of a moving fabric or division marks normally printed with uniform spacing, but distorted due to subsequent conditions, are readily solved with a high degree of precision by means of photoelectric relays. For edge control, the relay is responsive to the quantity of light reaching the phototube. In normal position, the fabric intercepts half the light beam. Lateral movement of the fabric—in either direction—changes the amount of light reaching the phototube. The resulting impulse—through the electronic control causes the positioning motor to restore the fabric to the normal position. This control is very sensitive, and the fabric position can be maintained within plus or minus $\frac{1}{64}$ in. deviation.

REGISTER CONTROL, essential in keeping a repeating pattern in a moving fabric properly located for shearing or multi-color printing, is accomplished by changing the speed of the feed rolls with respect to the shear or printing rolls. This compensates for shrinkage or other distortion that might cause changes in the true unit length. In the operation of this equipment, photoelectric tubes "pick up" the actual positions of register marks and compare them with the true positions for register. When the electronic control "sees" that the fabric is out of register, it immediately adjusts the speeds of the motor driving the rolls to bring the fabric back into true register.

Another electronic device is the photoelectric width gage, which is designed essentially for a continuous measurement of the width of moving sheets, fabrics, etc. The width measurement is made between the edges of the material as it passes a fixed point in space and is largely independent of the transverse motion of side register of the fabric. Fig. 4 shows the arrangement of the optical system of such a gage. The system depends for its initiating force upon the partial interception of light beams by the edges of the fabric. These forces can be indicated and recorded directly in units of width by suitable instruments; they can also be utilized through electronic controls to actuate width-controlling equipment.

In many textile finishing processes, such as mercerizing, there is a tendency for the cloth to acquire a non-uniform shrink, yet it is essential to maintain a uniform width in the finished product. Here, the photoelectric width gage might be coordinated with width-control equipment.

DETECTION OF SKEW, and utilizing this detection as a means of control in the automatic straightening of cloth during finishing, is done with the G.E. weft straightening control, illustrated in Fig. 5. This is accomplished by directing light beams through the cloth onto

phototubes and comparing the frequencies of the light interruptions produced by the weft or filling threads.

Employed in this equipment are two scanning systems placed near the edges of the frame to scan the most representative portions of the moving cloth. When the cloth is straight (i.e., free from skew), the frequency of light interruptions will be the same in each scanner. However, any introduction of skew in the passing cloth will produce inequalities in the two frequencies. These produce an output voltage in the comparator proportional to the magnitude and direction of skew. This voltage controls the operation of the straightening motor.

A surprisingly high degree of straightness is being obtained in the operation of some 25 of these equipments. For example, 80-in. sheeting, moving at 100 yd. per min. is consistently held within plus or minus ¼ in. of true straightness. The extreme sensitivity of the tubes is apparent from the smallness of the light beam (⅛ in. wide by 0.004 in. thick) and from the small differential frequency resulting in comparing values ranging from 8,000 to 14,000 cycles per second.

The foregoing serves to illustrate some of the more common electronic applications in textiles. Many more are under consideration and will doubtless be accepted in the industry's quest for better ways of doing things.

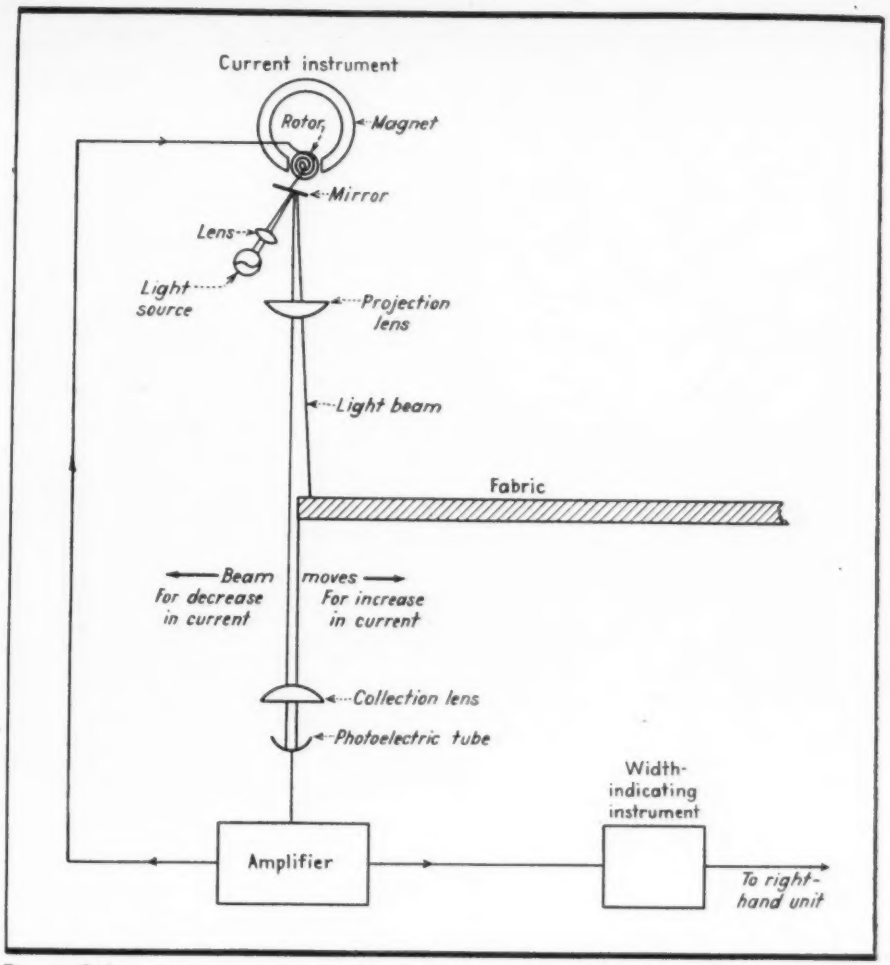


Fig. 4. Schematic arrangement of optical system of photoelectric width gage.

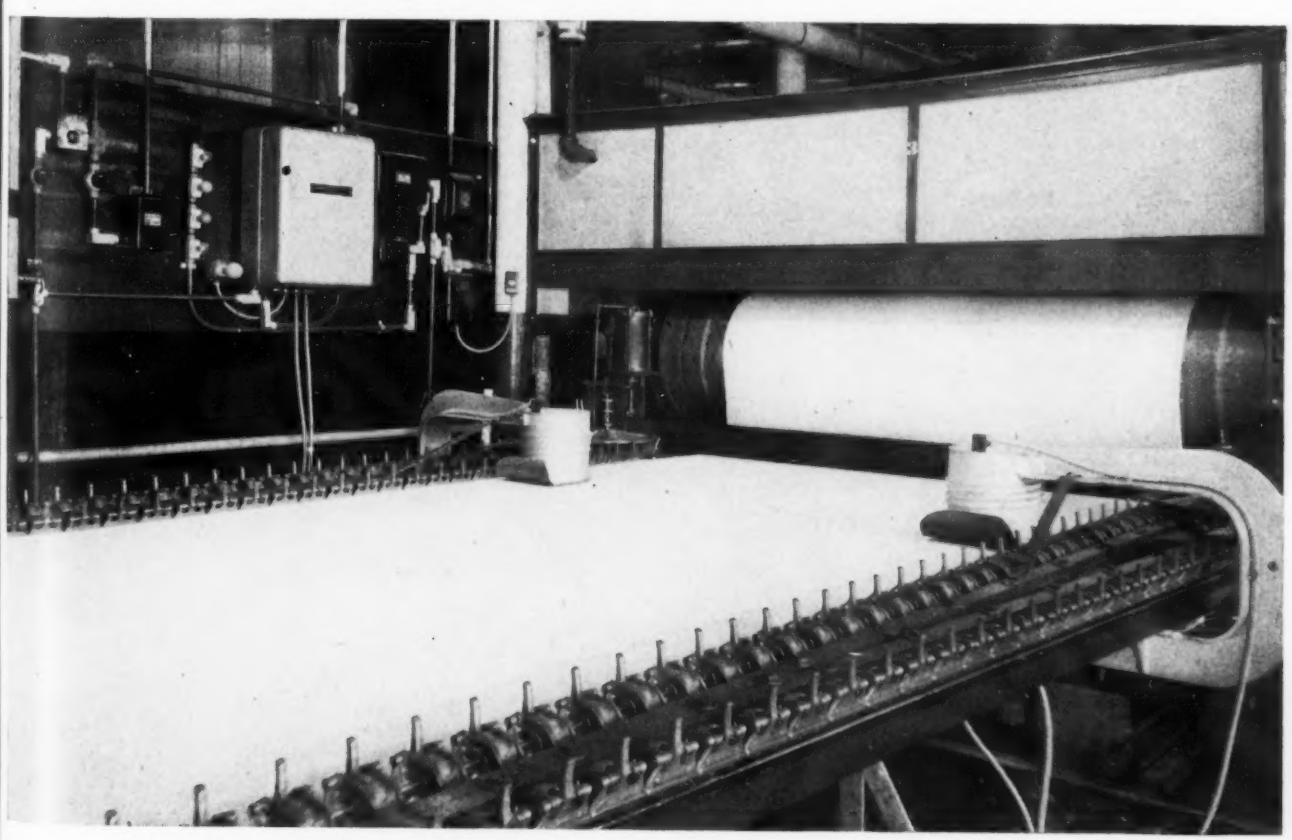


Fig. 5. G.E. photoelectric weft-straightening control applied to Winsor & Jerauld tenter.

Finishing 16-oz. Green Kersey

To meet the Marine Corps specification calls for great care in every operation

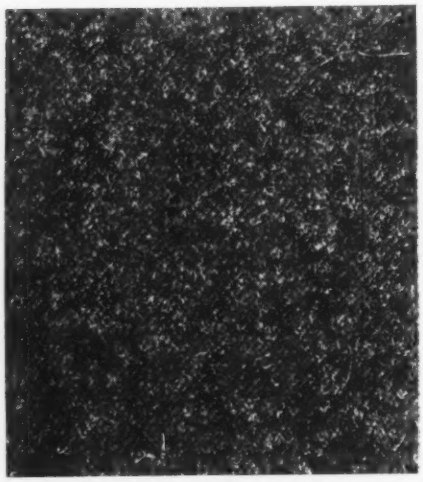
By DAVID WELSH

MARINE CORPS SPECIFICATIONS for 16-oz. kersey call for a thoroughly fulled and covered finish, well sheared and pressed. Weight shall be not less than 16 nor more than 17 oz. to the linear yard, based on 54-in. width, with 11% moisture content. Residual shrinkage must not exceed 3½% in length and 2½% in width.

Good finishing calls first for proper handling of coarse ends, slubs, and knots in the mending room. The tails of loose ends left by the weaver when replacing an end down should be snapped out by the sewer or burler, and the bunch that it sometimes makes carefully removed so as not to make a hole. If the bunch should inadvertently be left and allowed to felt in the fulling, removing it before shearing will leave a hole; if allowed to pass along to the shear, an ugly shear hole will result. Threads out and mispicks need not be sewed in, as the heavy felting this fabric receives covers them up. Kinks must be taken care of.

Careful and thorough soaping is imperative, because dry spots or streaks show up a few shades darker, making the cloth unusable wherever they appear. These defects cannot be effaced by refulling, as refulling throws the shade too far off for acceptance. If dark spots or streaks occur, about the only thing that will remedy them is to saturate the goods in a washer with a mild solvent, put in a clean box truck, allow to stand overnight with the solvent, put in washer next day, run in solvent about 30 min., rinse thoroughly with cold water, extract, and dry.

THE MAKE-UP OF THE SOAP SOLUTION for fulling depends on the lubricant used on the stock in the picker house. When lard oil or vegetable oil is the base of the emulsion, there must be sufficient alkali to insure complete saponification. Unless there is an excess of lime in the wool, 8 oz. of soap and 4 oz. of alkali to the gallon usually will suffice, although 10 to 12 oz. of soap is better. If this amount of alkali fails to show a nice creamy lather when the goods have run long enough to be thoroughly saturated with fulling



16-oz. Kersey for Marine Corps is required in a covered finish, well sheared and pressed.

solution, more is required. When a mineral oil is used in the picker house emulsion, 12 oz. of a heavier bodied soap and 2 oz. to the gallon of alkali will produce superior felting. Note that the amount of alkali is reduced.

If the goods weigh about 16 oz. from the loom, the required shrinkage would run about 7 in. in the head, and to as near 54½ in. wide as possible. Because of the width of the fabric, it is necessary to double up each piece in fulling in order to make the width synchronize with the head shrinkage. Tacking is not necessary, as the listings do not roll or felt down in the fulling. If the fulling solution is right, fulling should be completed in about 2 hr.

IN SCOURING, after the ends are sewed up and the goods run around once to get straightened out, the washer is stopped, and enough cold water added to about half cover the goods. Then the washer is started and run for 10 min. to loosen the fulling soap. Next the gates are opened and as much of the dirty soap allowed to run off as will, using no water. Finally enough fresh soap is added to raise a fair lather, the goods are run for 30 min., and then rinsed for 1 to 1½ hr. with cold water.

The fulling and scouring procedures outlined above prevent fulling mill and washer wrinkles and result in a uniform final shade. The goods are now hydro-extracted or vacuum extracted, folded into box trucks ready for carbonizing, the seams being sewed with a fairly heavy silk thread.

There is considerable difference of

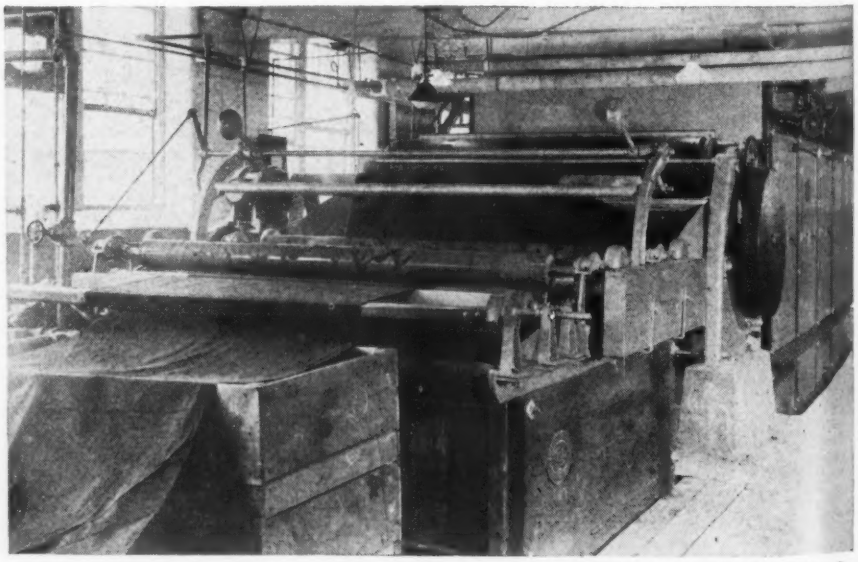


Photo courtesy of James Hunter Machine Co.

Concentration of acid in carbonizing and neutralization after carbonizing are important factors in finishing kersey.

opinion as to the proper strength of the sulphuric acid in the acid tank. The writer finds that 5°Be. is a suitable strength. This comparatively high strength does not seem to harm the goods, and in many instances does so thorough a job that crushing or dry milling can be dispensed with. Getting the shade to standard is one of the most important duties of the finisher, and this makes neutralizing a process that cannot be handled in a slipshod manner. Sometimes the proper shade is obtained with a good run in cold water—not more than 60 min.—in the washer. Again, it may take some specific concentration of alkali or of acetic acid to swing the goods to the proper shade. A few experiments will show the necessary procedure. When this is found, it should be adhered to.

After neutralizing, scutching and vacuum extracting or hydro-extracting prepare the cloth for drying. As a rule, drying at 59 in. will bring the goods to the required finished width of 54 to 54½ in. It is advisable next to inspect the pieces over a power perch. Quite often defects can be noticed and corrected here, and thus save many allowances in the finished goods. For example, oil or grease spots, rust stains, yarn fliers that have been left by the sewing room, bunches, etc., can be taken care of at this inspection; and some of them can be prevented from repeating when the cloth goes through the shears or press.

SHEARING is the next process. The 16-oz. kersey calls for one run on the back and three on the face on a two-cylinder shear—rather close on the face, but not so close that the goods appear thready.

As the color of the fabric is obtained by mixing stock-dyed green wool and white wool, numerous white wool specks may have to be taken care of. If the good are specked with burling or specking irons, great care must be exerted, as it is very easy to dig holes in the fabrics.

After the pieces are specked (if necessary), they are given a good hard pressing, then are subjected to a full decating—about 3 min. each way at 10-lb. pressure; cooled; and again pressed hard. Finally the cloth may be conditioned through a conditioner and allowed to remain on rolls overnight to acquire the 11% moisture content permitted according to the specification.

Hints on Vat-Dyeing Spun Rayons

Methods for overcoming defects which are commonly encountered in the mill

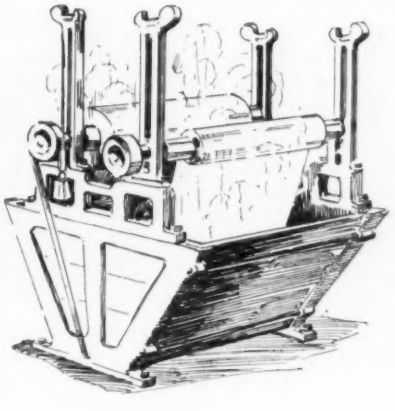
HINTS ON PREVENTING DEFECTS frequently met with in vat dyeing of spun rayon fabrics are included in a technical bulletin prepared by Arthur R. Wachter, of American Viscose Corp., and released recently by that company. According to Mr. Wachter, some puzzling cases of uneven dyeing have been traced down to the lack of proper desizing.

Desizing is accomplished by padding the cloth on a two-roll mangle. To assure a thorough wetting out, it is recommended that grooves of ¼ in. depth and 3 in. apart be cut into and around the bottom roll. The bottom roll is generally a harder rubber than the top roll, and these ring-like grooves permit the desizing solution to wet out and saturate the cloth thoroughly, thus assuring uniform desizing results. The goods are wound off the desizing machine and are hung on frames and rotated occasionally by hand for from 4 to 6 hr. This rotation is necessary to prevent drainage to the bottom of the roll.

Scouring is best carried out on an open-width driven-nip soaper. It is important that after scouring the fabrics contain less than 0.5% of impurities.

After scouring, the goods can be dried on continuous cans, although this may lead to can blisters. A new type of roller dryer is especially designed to prevent these and other defects. The cloth passes through heated chambers inside of ducts with louvres so constructed that a hot air current is in the same direction as the cloth is in travel. This type of dryer relieves all filling tension, and very little tension is applied warpwise, thus permitting a greater fabric shrinkage.

Vat dyeing is done by the pad-pigment-jig method. If there is too long a span between the color spray pipe and the mangle roll, vibration of the fabric causes migration and the result is similar to an irregular moire. Also, tension plays an important role in pigmentation. Too much tension results in streakiness, and too little will result in poor color absorption. It is advisable to have a set of dry cans connected with the pad mangle so that the fabric passes quickly from the pad to the dryer. Every effort must be made to have a perfectly wound roll, as an unevenly wound roll causes uneven dyeing along the edges.



To overcome a shade difference from one end of the roll to the other in pigment-pad-jig dyeing, the following procedure is recommended: If a batch of color of 100 gal. is sufficient for padding a 10-yd.-per-lb. fabric, reduce this quantity with water to 133 gal. and pad with this reduced color. To the jig reducing bath containing from 40 to 60 gal. water, add 5 gal. of the pad liquor, if the roll took 15 gal. on the pad. With a 5-yd.-per-lb. fabric, reduce the pad liquor of 100 gal. to 110 gal. If a roll on the pad consumes 15 gal. of the 90% liquor, add 1½ gal. to jig. Add the hydrosulphite and caustic needed, heat bath to the temperature required for the particular dyes used. When dyes are reduced, run cloth six ends and oxidize as usual. Rope wash in cold water and dry. Soaping is necessary only if shade in cold water and dry. Soaping is necessary only if shade has to be developed by soaping.

To check results: run off the roll and lay out the first end 5 yd. from the end of the cloth seam and compare with last seam that entered the bath. If the first end entering the jig is weaker than the last end, then the amount of pad liquor added before dyeing must be increased; if a little darker, it must be decreased.

MANUAL OF MILITARY FABRICS

Part II—6-oz. Cotton Twill

Manufacturing and processing details for shirting fabrics covered by Army Specification No. 6-311

FOR USE IN LIGHT-WEIGHT ARMY SHIRTS, the Philadelphia Quartermaster Depot requires large quantities of 6-oz. cotton twill. This fabric is covered in Army Specification No. 6-311, which supersedes Quartermaster Corps Tentative Specification PQD No. 95. Below is given a brief abstract of Specification 6-311, followed by detailed information—not given in the specification—on the manufacture and processing of this fabric.

Abstract of Specification

Yarns: Cotton used in the manufacture of yarns shall be thoroughly cleaned, well combed, and evenly spun into a single yarn for both warp and filling. Two ply yarns will be acceptable.

Color: The cloth shall match an approved sample and shall be evenly dyed with vat colors and shall show a good fastness to the following standard tests:

Fastness to weather—Samples shall be exposed for 30 days.

Fastness to laundering—Tests to be conducted by washing procedure as outlined in Section XIV, Federal Specification CCC-T-191a.

Fastness to bleaching—Test to be conducted as outlined in Specification No. 6-311, as follows:

Any commercial preparation of sodium hypochlorite is diluted with a buffer solution and/or distilled water to an available chlorine content of 0.3% and a hydrogen ion concentration pH 11±0.2. A distilled water solution of c.p. sodium hydroxide, c.p. sodium bicarbonate, or c.p. sodium carbonate or any combination of the three may be used as buffering agents. Next 5 grams of c.p. sodium bisulphite (anhydrous) is made up to 1 liter with water.

A specimen of the colored material weighing from 2 to 6 grams is taken for test. The specimen is wet out thoroughly in distilled water or in the event that it has been given a water-repellent finish, it is wet out in a 0.5% neutral soap solution at 80°, ± 5°F., and rinsed free of soap with distilled water. The surplus liquid is removed and the specimen is placed in a one pint glass jar with glass cover and rubber washers containing 50 times the dry weight of specimen of sodium hypochlorite solution at 80°F. ± 5°F.

The jar containing the specimen and sodium hypochlorite solution is placed without delay and agitated for 1 hr. at 80° ± 5°F., in a Launder-Ometer or similar machine which will maintain the required temperature. (The time is measured from time of entry of specimen into the jar to time of removal from the jar and entry into rinse water.)

The specimen is removed from the jar, rinsed thoroughly in cold, running tap water for 5 min., squeezing at intervals. The surplus water is removed by any convenient means after which the specimen is placed in the sodium bisulfite solution at 80° ± 5°F., for 10 min., at the end of which time the specimen is rinsed in cold, running tap water, squeezing at intervals. After removal of the surplus water by any convenient means, the specimen is dried by pressing with a hot iron having a temperature of not over 325°F.

In the event of dispute a specimen weighing 4 grams shall be tested with the above conditions, except that no tolerance in temperature or pH is permitted.

Physical Requirements—Width, exclusive of selvage, shall be 35½ in. minimum; weight (maximum per sq. yd.) 6.2 oz.; ends and picks (minimum) 114 x 54; breaking strength minimum by 1 x 1 x 3 grab method shall be 110 lb. warp and 45 lb. filling. Weave shall be a four harness twill to the right, three up and one down. Twill shall be clear and prominent, produced by having the direction of the warp yarn twist opposite to the direction of the twill line where a two-ply yarn is used. Where single yarn is used, the twist of the warp yarn may be in the same direction or the opposite direction to the direction of the twill in the fabric. The fabric shall be preshrunk and not shrink more than 1% in either direction of the warp or the filling when sub-

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Recognizing that complete data on gray constructions, yarn organizations, weaving, and finishing would be of great assistance to textile mills, the editors of TEXTILE WORLD, with the approval of officers of the Quartermaster Corps, have begun the preparation of a Manual of Military Fabrics. This manual will describe in detail the manufacture and processing of those types of fabrics which are most urgently needed in large quantities. Part I of the manual—dealing with 5-oz. Cotton Poplin Type II, covered by P.Q.D. No. 1—appeared in our February issue. Part II, discusses the 6-oz. cotton twill covered by Army Specification 6-311. The mill organizations and other manufacturing and processing data were furnished through the cooperation of textile mills which are producing this fabric under Government contract. It is recognized that other plants having different types of equipment will have to make some modifications in the organizations, formulas, and procedures presented. Accordingly, these data should be regarded not as "standards" which must be followed, but as guides to the more efficient production of this fabric.

With the start of the defense program, TEXTILE WORLD began publication in August, 1940, of a series of articles on Fabrics for Military Purposes. Essential information on gray constructions, yarn sizes, and processing of nearly 100 different types of woven fabrics and knit goods has been presented thus far in that series. In producing certain of the fabrics required in large quantities, some mills have been able to meet specifications with much less difficulty than have other mills. This is due largely to lack of uniformity in manufacturing methods throughout the industry. Contributing to this lack of uniformity is the fact that Government specifications for finished fabrics in most instances do not give gray constructions, yarn sizes, or twist, or details on manufacturing and processing operations.

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jected to tests for shrinkage in laundering, Section XIV, Federal Specification CCC-T-191a. The cloth shall be closely singed, bleached, fully mercerized, and be practically free from sizing. Use of finishing or loading materials to increase the weight or breaking strength is prohibited.

Manufacturing Details

Yarn manufacture—Yarns are made on standard combed yarn equipment without special adjustment except for staple length. Clean stock is necessary.

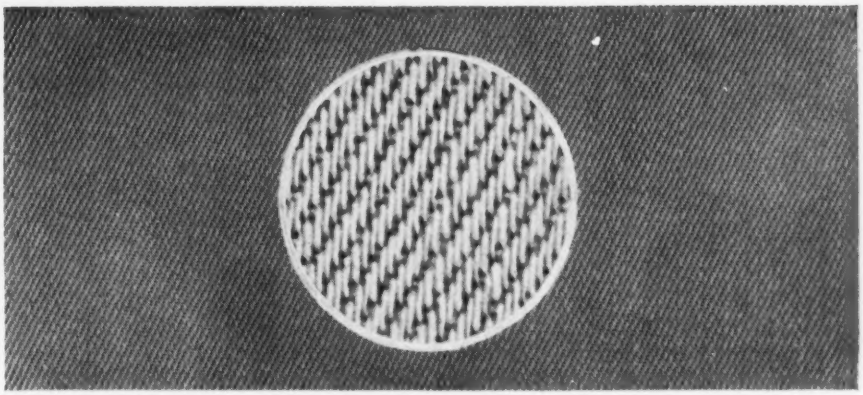
Opening, blending, picking, carding, combing, drawing, and roving organizations given below can be the same for both warp and filling. Double roving is used in the spinning. Roving organization No. 3 for 4.00 h.r. and spinning organization No. 3 for 21s warp are employed for making the warp yarn. Roving organization No. 3 for 4.00 h.r. and spinning organization No. 4 for 24s filling are used for making the filling yarn.

Opening and Blending Organization No. 2

Grade—California, Strict Middling
Staple—1⅛ in.
Mix—Load from 16 bales (Top cut)
Processes—Hopper feeder, trunk, hopper feeder and condenser, gyrator

Picking Organization No. 2
11.54-oz. lap

One process
Type beaters:
Buckley back
2-blade center
Kirchner front
Beater speeds:
815 r.p.m. back
830 r.p.m. center
1010 r.p.m. front



Cotton twill, 6-oz., as covered in Army specification 6-311

Carding Organization No. 2
44-gr. sliver

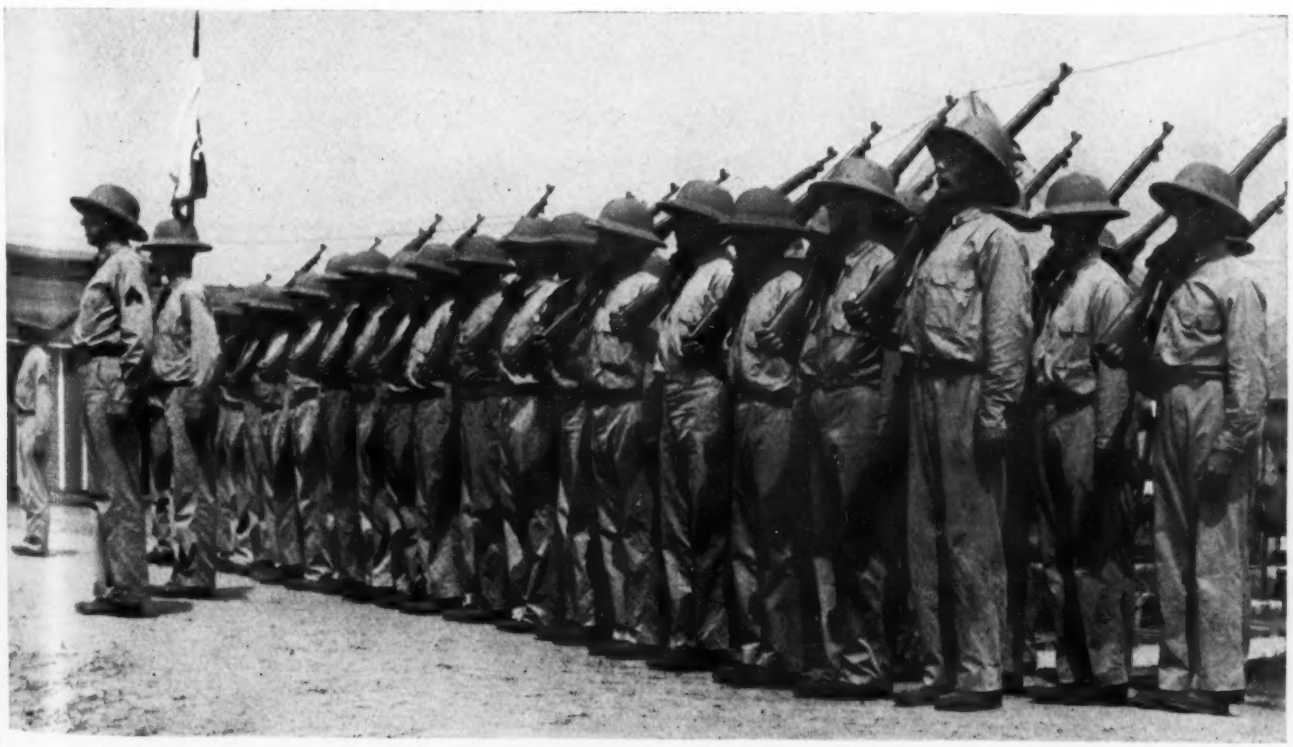
507 r.p.m. lickerin
196 r.p.m. cylinder
9 r.p.m. doffer
3.4 in./min. flats
50 in. dia. cylinder
27 in. dia. doffer
110 cylinder wire
120 doffer wire
120 flat wire
106.7 draft (waste deducted)
8.62 lb. per hr. production
7% waste
Main settings:
0.012 in. feedplate to lickerin
0.007 in. lickerin to cyl.
0.007 in. doffer to cyl.
0.007, 0.007, 0.009 in. flats to cyl. Points 1-2-3
0.009 in. flats to cyl. Points 4-5
0.017 in. front plate
0.017 in. back plate (top)
0.022 in. back plate (bottom)

Combing Organization No. 2
55-gr. sliver

Sliver Lapper
20 ends up
475 gr. lap
1.85 draft
Ribbon Lapper
4 doublings
546 gr. lap
3.48 draft
Comber
126 nips per min.
15% waste
67.5 draft (waste deducted)
13 lb. per hr. production

Drawing Organization No. 2
57-gr. sliver

1st Drawing—57 gr. sliver
375 r.p.m. F.R.
1¼ in. dia. F.R.
5.79 draft (*Continued on next page*)



Light-weight Army shirts for warm-weather wear are made from vat-dyed 6-oz. cotton twill.

Type rolls:
Top: leather
Bottom: steel fluted
2nd Drawing—57 gr. sliver
375 r.p.m. F.R.
1¼ in. dia.
6.00 draft
Type rolls:
Top: leather
Bottom: steel fluted

Roving Organization No. 3
4.00 h.r.

Slubbers (Long draft)
27.4 draft
137 F.R. speed
1⅛ in. dia. F.R.
4.00 hank roving
2.40 twist

Spinning Organization No. 3
21s yarn

4.00 roving-double
10.5 draft
147 F.R. speed
1 in. dia. F.R.
3.76 twist multiple
Z direction of twist
23 gr. travelers (weight of 10)
1 1/16 in. ring size
Warp bobbin type package

Winding Organization No. 1
21s yarn

Cone type pkg.
4 lb. pkg.

Spinning Organization No. 4
24s yarn

4.00 hank roving-double
12 draft
139 F.R. speed
1 in. dia. F.R.
Z direction of twist
20 gr. travelers (weight of 10)
1 1/16 in. ring size
Warp bobbin type package

Winding and Quilling Organization No. 1
24s yarn

Winding
Cone type pkg.
2 lb. pkg.
Quilling
Quill type pkg.
8 in. quill
0.79 oz. per quill
10 yd. bunch
1¾ in. taper

Warping Organization No. 2

16,500 yd. length set
9 beam to set
469 ends per beam
Magazine type creel, 500 ends capacity

Slashing Organization No. 2

22 yd. per min. slasher
8% size added

Size formula No. 2

107 lb. starch (potato)
8 lb. softener
100 gal. finished

Drawing-In and Weaving Organization No. 2

5.55-02. twill 36-in. finished width
Drawing-in
8 body and 4 selvage harness
522 ends per harness body
Single dobby-type of harness
12 in. length heddle
Flat steel type heddle
Mechanical type 0.007 in. thick drop wires (Used double).
Weaving
Gray: Oz. per linear yd. 6.40; yd. lb. 2.50; width 39 in.
Warp ends in. 108; picks in. 56
Warp yarn 21/1 Fill. yarn 24/1
Percent warp 71.30; percent filling 28.70
Selv. threads 21/1
Ends selv. 48; ends drawn 2 per eye, 4 per dent
Reed d/in.; 26.25 Ends/dent 4
Reed spread 40.23 in.; No. harness 8 and 4 selv.
Ends per eye 1; Weave 3/1 twill to right
Pattern or straight draw—straight
Take-up warp 10%; filling, 2.9%

Fabric Manufacture—Keep loose top shed to get a good face on the twill. Run high whip roll and take-up roll. Time loom to close shed 2 in. before reed strikes the fell of the cloth. Tension warp to take picks well.

Looms suitable for weaving this fabric include Draper K Model equipped with Roper let-off, Midget feeler, and Stafford thread cutter and is run approximately 150 p.p.m.; Draper Models E, X, X-2, XK, and XD. Attachments recommended are: Nutting bar take-up; Stafford thread cutter; and Midget feeler. Loom speeds require adjustment to the fabric—especially if high production fabric was formerly run on them. Crompton & Knowles Looms suitable for the twill and other Government fabrics include the C-3, C-4, C-5, and C-6; no changes are required in the equipment of these looms; loom speeds can be adjusted to secure maximum production of first-quality cloth.

Cloth Room Organization No. 2

No. Inspection—One
Type Inspections—Over machine
No. Sides Burled—Both; knots to back
No. Bushings—None
No. Shearings—None
No. Runs Napper—None
Type Grading—Table
Folding—Ship in fold
Length Folds—1 yd.
Bales or Rolls—Bales
Fin. Yd. per cut—Not less than 50
Total Yd. per pkg.—1,200 approx.

Finishing Details

Scouring and Mercerizing

1. Inspect cloth in the gray.
2. Sew pieces end to end, using flat butted seams.
3. Singe on both sides.
4. Desize in quench box at end of singer or on padder or jig. If quench box or padder is used, let goods stand in pit 3 to 4 hr. Wash through tight string washer. (Desizing is omitted in some mills, and the cloth goes directly from the singer to the boil-out; however this is likely to cause difficulty in subsequent operations.)
5. Open on dry cans and wind for boil-out machine.
6. Boil out in open width on continuous boil-off range or on jigs. A typical boil-out or scouring formula is 10° Tw. caustic soda and 0.2% fatty alcohol sulphate and 0.1% sodium hexametaphosphate on the weight of the liquor.
7. Mercerize wet; wash and dry.
8. Wind on rolls for dyeing.

Dyeing

Dye to match an approved sample, swatch of which can be obtained from Philadelphia Quartermaster Depot, with vat dyes by pigment-pad method. Following are three approximate formulas for producing the required shade.

Vat Dyeing Formula No. 3
Olive Drab—Pigment Pad Method

Dye	*Oz. per Gal.*
Vat Brown G, Paste Double (C.I. 1152)	2.60
Vat Khaki 2G, Paste (Pr. 122)	0.45

Vat Dyeing Formula No. 4
Olive Drab—Pigment Pad Method

Dye	*Oz. per Gal.*
Vat Brown G, Paste Single (C.I. 1152)	5.40
Vat Olive R Paste (C.I. 1150)	0.80

Vat Dyeing Formula No. 5

Dye	*Oz. per Gal.*
Vat Brown G, Paste Double (C.I. 1152)	1.60
Vat Khaki 2G Paste (Pr. 122)	0.73

1. Pad cloth at constant speed of 120 to 150 yd. per min. and temperature of 140° to 200°F., depending on equipment used and preference of dyer, winding on rolls of approximately 250 lb.
2. Reduce on jig 4 to 6 ends at 130° F. in 6 lb. of sodium hydrosulphite and 6 lb. of caustic soda to 100 gal. (Added in equal parts at beginning of first two ends.)
3. Rinse 2 ends in cold water.
4. Raise temperature to 140°F.; add 4 lb. of sodium bichromate and 1½ gal. of acetic acid (56%); and run 2 to 4 ends.
5. Rinse 4 ends at 160°F. using hot water only—no soap.
6. Dry on cans.
7. Preshrink on Sanforizing machine or other shrinkage equipment to give residual finish of not more than 1% in either warp or filling, when finished to give a minimum of 35½ in. exclusive of selvages.

Inspecting and Folding

1. Inspect.
2. Fold in continuous pieces of not less than 50 yd., using 1-yd. folds.
3. Ticket, pack, and mark according to instructions in Army Specification No. 6-311.

Making a Transportation Survey

To assist employees in securing rides and relieve congestion of local carriers

By L. S. FLINT

"YEH! I KNOW! Your tires are gone and you had to wait for a streetcar. Well, I'm getting sick of that excuse. Be here on time in the morning or you're fired!"

The speaker was a foreman in a large western textile plant. He was sore—and in a way, you couldn't blame him. Employees were showing up late all the time. But he wasn't approaching the problem from the right angle in "bawling out" that employee. The poor man had been forced to lay up his car for a lack of tires and he did have to wait for a streetcar.

Smart thing to do when cases like this pile up is to find ways and means of helping employees get to work. The fact is, that employer consideration of employee transportation problems is rapidly becoming a practical necessity as well as a patriotic duty. And, believe it or not, every textile manufacturer can accomplish a great deal in this direction with just a little effort.

First step is to find out where your employees live and what facilities they have for getting to work. This is easily done by asking workers to fill out transportation cards, as shown below.

Having completed the basic transportation survey, the second step is to put the information in easy reference form. Use big headed pins or colored paper circles to mark on a city map the home location of each employee. This map will show at a glance what workers live near each other and which ones can trade rides.

For the purpose of convenient card-filing, block off the city map into small districts, labeling each one with a letter of the alphabet, a number or a Roman numeral. Size of those districts will depend on the area covered and by the number of employees in a district. The smaller the sections blocked off, the greater will be the efficiency of the group transportation program—an area of six square blocks is excellent. Divide up the whole city map this way even though no employees live in certain districts for new workers may be secured from those areas. Segregate the original transportation record cards according to those districts. Under section A of an alphabetical file, place all the cards of employees who live in the district marked A on the map, the District B names under the classification B, etc., until all cards are classified.

Now the whole transportation picture is at your fingertips and the third step is to set up a transportation booth where employees can come to meet each other and make arrangements. The person in charge matches up employees that can ride together.

FOR EXAMPLE, under the A classification, is a card for Jim Jones, at 1414 Broad St. Jim's tires are getting pretty thin and he's having to walk nearly a dozen blocks to get a streetcar and he wants to make arrangements for a ride. In the A file is a card on John Smith who lives at 1618 Broad St. He doesn't know Jim, but he passes his house every day on his way to the plant. John has a brand new set of tires. Furthermore, he already takes his wife and a friend to work every day, thus the chances are he'll be given a fair gasoline ration.

Asked if he'd be willing to take Jim to work, John readily agrees. The two men meet each other at the transportation booth and make a financial arrangement and set times.

That's the way the plan works—it's simple, quick, and easy. Besides saving rubber and gasoline and making sure that employees get to work on time and without lost motion, it builds internal harmony. People in different departments become acquainted. They visit each other at their homes. They acquire an understanding of new problems. They become happier and better employees.

Employers should cooperate with local transportation officials and other employers in working out an overall-employee-transportation plan. By referring to the map and card-file, arrangements can be made to stagger hours of employees in various departments so that peak loads can be reduced and available buses and streetcars put to more constant use. Hours in small plants can be staggered by mutual cooperation and agreement among employers. Employers find that by swapping employees they can relieve some difficult situations. Where a worker can report regularly at another plant and his occupation remains the same, the swap can usually be made easily.

Employers have the entire responsibility for the successful operation of this plan. Other industries in various parts of the country have instituted the survey and the plan is operating successfully. A few large textile companies operate their own bus lines for workers where the survey shows the needed is sufficient.

EMPLOYEE TRANSPORTATION CARD

Name _____

Address _____ Telephone No. _____

Job Classification _____

Hours of work: Begin _____ End _____

How do you now get to work? _____

If by private automobile, how long will tires last? _____

If you drive would you be willing to bring one or more employees to work? _____

If you aren't driving would you like to get rides with other employees? _____

Is there any convenient public transportation for your use when your tires are gone or your gasoline rations are such that you can't drive to work? _____

Are street car or bus schedules in your neighborhood so arranged that you can get to and leave work promptly? _____

Give name and time of bus leaving your station or street car you must catch to get to work on time? _____

Employee transportation card

Good-Neighbor Policy Is Needed

South American textile situation demands correctives, problem difficult

EDITOR'S NOTE: What to do about the good-neighbor policy? This article merely poses the question. It is one which will be important for the duration, and infinitely more important post-war. We hope to publish more articles which will shed further light on our relations with Latin America.

The author of this particular piece was a familiar figure in U.S. textile circles up to a few years ago. He has been for the last six years general superintendent of the Cia. Peruana de Tejidos Sedasol, S.A., Lima, Peru, the largest rayon weaving mill on the West coast of South America, which also does its own dyeing and printing. Mr. Reutlinger formerly was a partner in Hatch & Reutlinger, textile consultants, New York, was lecturer on textiles at Columbia University and College of the City of New York. He was first president of the American Association of Textile Technologists and one of the sponsors of the Standards of Woven Dress Fabrics, Testing and Reporting.

By J. J. REUTLINGER

LATIN AMERICAN RELATIONS have been occupying not only Government circles, but the public as well. Business men have taken note of the fact that south of the Rio Grande is additional territory, in which articles and merchandise manufactured in the United States will be consumed, and from which may be imported necessities much needed by the United States. A big barrier to a fruitful approach to the numerous small countries of the southern hemisphere has been reluctance of North Americans to learn foreign languages and to leave their own country to familiarize themselves with the habits and mode of living of these southern neighbors. This oversight resulted in domination of the business by Europeans and Asiatics, which now is causing great difficulty in most of the small South American countries, which find themselves cut off from their former sources of low-priced supplies.

Germany, in order to stimulate her exports created the Aski-mark, an institution by which all exports to foreign countries could compete in any world market. Through its low conversion value it enabled the foreign purchaser to obtain merchandise at a really low price. Italy in order to increase foreign business granted to the exporter an export premium up to 40% of the actual value of the merchandise. Japan with its low-priced labor provided a field for itself in South America. Due to these benefits extended to it, it was natural that South America purchased almost exclusively European and Asiatic merchandise and excluded the United States, due to our high standard of living and correspondingly high merchandise costs. By this selection, South America also remained in the lower brackets of the living costs herself.

PRE-PEARL HARBOR. After the outbreak of hostilities in Europe it became increasingly difficult to ship goods from Europe to South America. The German business completely ceased and with it the benefits of the Aski-mark. Italy for a while shipped merchandise but at much higher prices. France, Belgium, Holland, England became then the dominating suppliers of South America. Shortly afterward Belgium and Holland and France and Italy disappeared from the supply market, leaving only England in the field. Shipments of British merchandise came through at infrequent intervals and are still coming through. Japan then redoubled its effort for a foothold on South America and, since practically no merchandise came through from Europe, the Japanese did a land office business on mounting price levels. Irrespective of quality standards, Japan was in a position to ship the merchandise at reasonable prices which were so far below the prices of American manufacturers that there was actually no comparison. The strong efforts made by the American Government to bring the Latin American nations closer together and closer to the side of the United States has met with endless difficulties, particularly in connection with our own manufacturers who not only have shown unwillingness to enter into business with Latin America, but opposition to the wishes of their own Government.

In defense of American manufacturers it may be said that they have never been accustomed to sell small lots of goods and at the same time be bothered with a lot of detail work in making out of special papers, like consular invoices, extra copies of the regular invoices, special notices and weights for custom purposes and special packing prescriptions; then applications at the various Governmental agencies for export licenses and permits, which consume much valuable time for a comparatively small and unprofitable trade. However, as the field of supplies narrowed down, Latin America doubled its efforts to obtain merchandise in this country and at the same time the United States Government through its embassies and consular agents tried its best to work out an understanding between the Northern and the Southern Continents and is succeeding in bringing order out of chaos, and in getting supplies so much needed in the Southern countries to their destination.

AFTER PEARL HARBOR— The Japanese attack on Pearl Harbor and the declaration of war by the U.S.A. put an abrupt end to all Japanese imports into South America. Orders placed with Japan for future deliveries were washed out over night and the South American nations were thrown on their own natural resources, and, for nearly all manufactured goods, on the United States. Each individual South American country has established within its borders a number of small industries, some of which depend on imports of raw materials from outside; also as the machinery used in these industries is mostly of European make, repair parts could not be readily obtained. The United States is unable to furnish such parts, since European machinery is often of different type, or, if such parts could be duplicated in the States, the orders placed by the South American countries would not be large enough to encourage any manufacturer even to attempt to duplicate them. The war conditions further removed the possibility of specially made machine spare parts. Local South American mechanics have been called upon to make such parts, which though crude are often satisfactory for a temporary makeshift. More serious became the question of imports of raw materials for certain industries, like for instance the rayon industry, which is represented in almost every South American country, either by

rayon producing plants as in Brazil, the Argentine, Chile and Colombia, or by rayon weaving or knitting mills located in almost every country of the Southern Continent.

Before the outbreak of the war it was possible to import into South America rayon yarn at a cost about half that of rayon yarns in the U.S.A. The duties levied by most countries were fairly low and freight from the European countries was not much higher than from the United States. The rapid expansion of this newly developed industry often resulted in overproduction in recent years, which called for sales at cost or even at losses to the manufacturer. Retailers took further advantage and by creating loss leaders, sold much merchandise at cost. This created a false impression on the part of manufacturers who started to further increase their production, with the result of a false prosperity.

WITH THE INCREASE in raw material prices, it became more difficult to sell the merchandise at prices within means of the public purse and consequently sales dropped and most of the rayon mills which have run two and three shifts had to curtail their production to one shift. However this was an almost impossible feat to accomplish, since in most of the South American countries the workers are protected by numerous laws, and employers are prevented from discharging the excess shifts. They were forced by their respective Government agencies to keep up production, even though it was not needed. Only under pressure were cuts in working hours conceded.

A lack of understanding by the Labor Departments of ordinary business principles has brought industries almost to ruin, since these Departments often considered the political aspect of the situation as the prime aspect. One, of course, must always bear in mind that, in the small countries of South America, the working class has in many respects lived under conditions under which the average American worker could and would not live. Their economic condition has been far below American economic conditions. Strong labor unions have sprung up and the Governments have been inclined to acceed to many of their demands. Social Security acts have been passed and are giving immense benefits to the workers in form of vacations, indemnities for length of service, hospitalization, obligatory nurseries, overtime-excess pay, etc., many protections which the American worker does not possess.

Wages in general are based on the average cost of living in the various countries and this principle is now a bone of contention. American products have been considered in the past as luxuries, which only the foreigner or the man of wealth could purchase. With the total absence of European or Asiatic imports and the availability of only high-priced American merchandise, the living conditions of the South Americans have not improved. The rapid increase in cost of living plus curtailment of working hours forced by the unavailability of raw materials, has caused serious labor difficulties. Stabilization of prices of essential domestic articles has been attempted, but in the case of imported articles, which are also necessities, prices must fluctuate according to the price increase in the foreign country plus the freight and insurance cost differences, and exchange fluctuations of the respective currencies.

For some concrete examples we can look back to the year 1937, a time when rayon weaving mills had just about completed their first trial in most of the South American countries with the exception of the Argentine. Taking the cost of rayon imported from Europe as 100 we then had a set-up of figures as follows in a piece of rayon crepe of an average good construction.

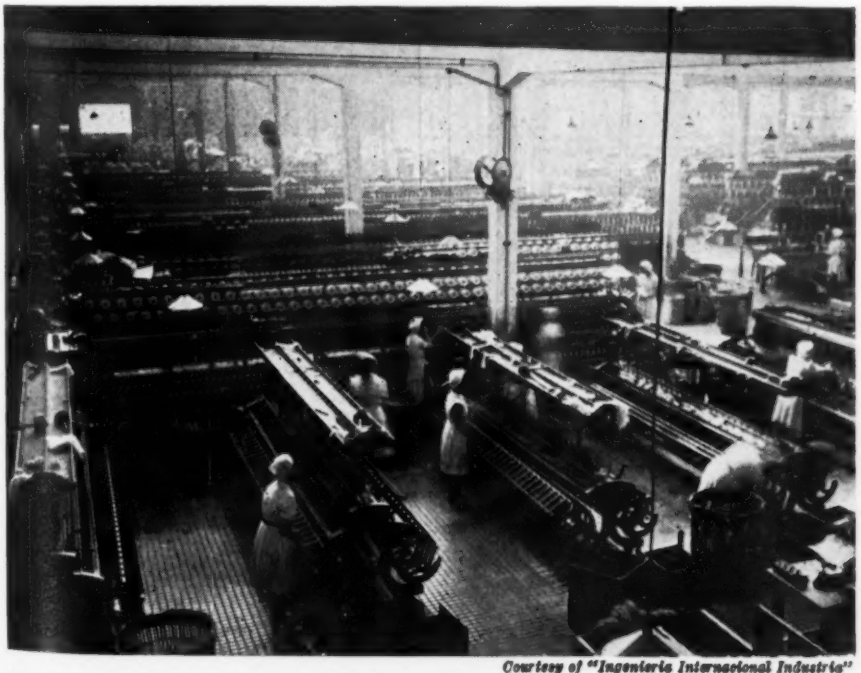
Raw material cost	100
Transportation, duty, etc	80
Labor	04
Overhead	09
Dyeing	05
Shrinkage	22
Total cost	220

Today's comparison (1942), with yarns imported from U.S.A. and adjustments made in labor rates as of today, shows the same construction to cost as follows:

Raw material cost	360
Transportation, duty, etc	174
Labor	05
Overhead	12
Dyeing	10
Shrinkage	62
Total cost	623

From these cost factors, one will see the extent to which the economic condition of a country may be affected, when South America, which had been enjoying the artificially-created European low costs, was thrown over night into forcible buying from the United States which has the highest cost-of-living rate in the world. This sudden change has caused dire hardships to the countries which are being so anxiously cultivated by the American Government. The general public in the Southern Continent, which knows or understands very little of politics and economy, are aware only that their purse strings are all tangled up and they look up to their Governments to untangle them. Workers are dissatisfied and many difficulties can be expected before a satisfactory economic condition or stabilization of wages and merchandise costs can be achieved.

Latin America is today looking toward the North instead of the East and West. Will the big brother up north help to cement a lasting friendship with his southern neighbors?



Courtesy of "Ingenieria Internacional Industria"

View of spinning, twisting and winding departments of Industia Lanera del Uruguay, S. A. at Montevideo. In this large woolen mill tile floors are quite generally used and a high standard of cleanliness is maintained.

Defects in Combination Fabrics

Careful loom-check prevents injury to crepe yarn of viscose and acetate

Imperfections in combination fabrics are frequently caused during weaving. The author, in this article, has listed several defects and suggests loom adjustments and settings that will prevent their reoccurrence. Other defects frequently found in combination fabrics will be discussed in future issues of *Textile World*.

By ARTHUR C. WAYMAN

FAULTS appearing in combination fabrics create problems that differ from the usual fabric defects found in cloth composed entirely of one type of yarn. In many instances the defects in combination fabrics are more pronounced. At other times the crepe effect produced in some combination fabrics may hide certain defects. Special care is required that the correct type of yarns are combined; otherwise serious trouble will be encountered in finishing, as defects of this nature are not always apparent in the weaving operation.

Loose ends are frequently caused by weavers replacing lost ends with those drawn from bobbins. It is difficult to ascertain with accuracy the correct amount of tension that should be applied to ends drawn from bobbins to avoid loose end marks in the finished goods.

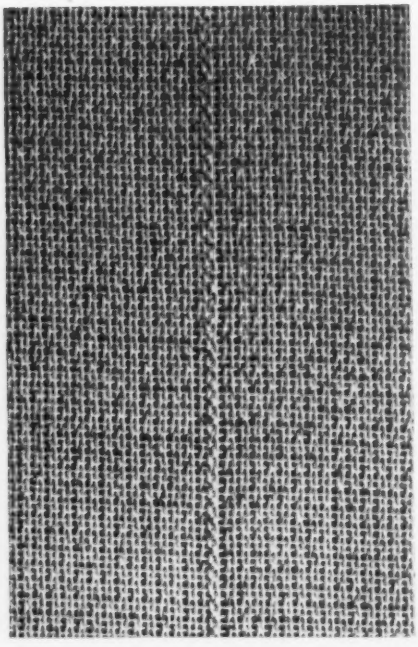
Sometimes bad ends—such as fuzzy acetate yarn, single ends with either the crepe or acetate end missing, or double ends composed of either two crepe ends combined with one acetate end, or vice versa—have to be removed. Such ends, when removed, should be replaced by warp ends from the beam crossed over from the edge, rather than to draw an end from a bobbin.

Loose ends can also be caused in warping. When the silk system is used, soft bobbins must be guarded against. Also, the reel or the warper should not be stopped too suddenly, as this may cause over-running of some bobbins and produce a loose end. When warping on the cotton system from cones or from parallel tubes, one should check the tension of each end with a tensometer every time a new creel is started. Thus, the ends with too little tension can be detected, and the necessary corrections made before a defective loom beam is produced.

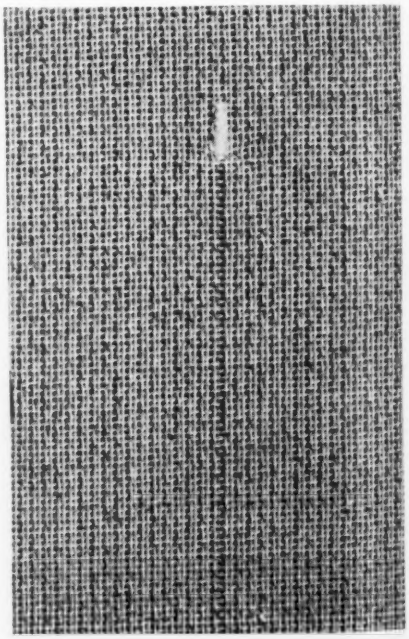
STRIPPED ENDS may be traced either to throwing or to weaving. In most instances the missing end is the acetate yarn. Too great a tension in 5-B operations during throwing, damaged yarn guides and take up rolls, and cut flyers in spinning can injure an acetate end sufficiently to cause that end to break under tension. During weaving improper tension and friction on the yarn by the harness motion, and yarn friction caused by the reed can easily sever an injured portion. The following adjustments should be observed for successful combination weaving if stripped warp ends are to be reduced:

1. Shuttles must fly perfectly true. The reed and the boxes must be in line so as not to throw the shuttle off its intended course. Rawhide pickers and the picker sticks must be kept in good condition. Too large a hole in the picker and a badly nicked stick where the picker is fastened to the stick can affect the flight of a shuttle. Sweep of the picker stick is also important. On the box side it should not exceed 8 in., in the magazine side kept at 8½ in.

2. The harness should be timed late when weaving combination fabrics; that is, the reed should beat up the cloth and be ¼ in. from the fell when the shed is completely closed. This setting assures a minimum take-up in width of the woven fabric and in turn reduces yarn friction at the reed. The picker shoe on the box side should be 1⅛ in. from the rear bearing of the picker-shoe shaft. On the magazine side this distance should be 1¼ in. The pick on both sides should, with this setting, commence when the lay is 8 in. from



Loose warp ends appear as a vertical streak and are caused by varying tension on warp yarns (2x).



Stripped ends appear as a vertical streak ending with a bunch of yarn. Also illustrated (below) is a single stripped end that has been removed from a fabric (2x).

breast beam, previous to beating-up.

3. Proper forming of the shed is assured with a 4 to 4½ in. high reed. This reed permits a wide opening for the shuttle passage without the danger of the warp sheet touching the bottom or the top of the reed. The most flexible part of a reed dent wire is its center, but the closer the wire is to the reed bands the more rigid it becomes, and this makes it increasingly difficult for knots to pass through without damage. Stripped ends often occur at a knot where an end is cut passing through the reed. Sometimes careless tying of knots by spinners, redrawers, and the warper operator, will cut the acetate yarn end to such an extent that only slight tension is required to cause a break. Knots should not be pulled too tight in tying, as this practice may cause the crepe end to dig into the acetate yarn, thus causing cutting and yarn injury.

The warp ends, of course, must not rub on the race plate. About ⅛-in. clearance is required. This clearance must be maintained when temples are used, as they sometimes cause the ends to lie either too high or too low. If the warp sheet is high, it may throw the shuttle crooked, which will damage the warp where it strikes the ends. Sometimes such damage will result in the formation of stripped ends.

4. The shuttles must always be in perfect condition. They should be sanded carefully and polished with orange shellac. Shuttle points should not be too pointed, but still not dull. Lining of shuttle boxes with felt will help preserve the shuttles, and therefore ease the task of the loomfixer.

5. Drop wires of the warp stop-motion must be maintained in good condition and arranged so that the warp end never presses the drop wire tight against the electrode rod. This condition must be watched, particularly in instances where the old silk system of running a cross through the wires is employed. Most successful rayon weavers eliminate the use of lease rods entirely so as to reduce unnecessary friction. Even in cases where weaves are used in which it is not possible to form an end and end lease with the harness, lease rods are not employed. When a lease is required at the end of the warp, such a separation is made with the drop wires. Heddles must be thoroughly cleaned and free from cuts or nicks. A modern type harness with slide hooks will not give extensive trouble with tight heddles, a difficulty that is frequently encountered with the older type stationary hook. Tight heddles will cause stripped ends.

The reed must be centered so that the warp passes through it in a straight line. Temples must hold the cloth firmly so that the angle of the selvage ends in relation to the reed is reduced to a minimum.

A slight reed-play should exist. The positive reed action, as built into the modern shuttle changing loom, provides for about ¼-in. reed play. Heavier or lighter springs may be used to counteract this reed motion, depending upon the construction of the fabrics being woven. The swivel at each end of the reed top should be in perfect shape so that the swing of the reed is absolutely true.

The Army's 1943 Textile Program

By MAJOR GENERAL C. L. CORBIN
Director of Procurement Office of the Quartermaster General

This statement by the Director of Procurement, of the Office of the Quartermaster General sums up the textile situation as it is shaping up for 1943. "The Quartermaster Corps and the textile industry is a team that can meet all requirements and solve all problems," says General Corbin. He reiterates what others have said to the effect that the year's needs will tax the capacity of the industry to produce. Plans are already under way in many quarters to make sure that the industry will not be found wanting.

THIS YEAR OF 1943, our second at war, will tax the capacity of America's textile industry and the ingenuity of its executives. The Quartermaster Corps is confident, however, that the demands of our Armed Forces will be met.

As a result of the herculean efforts of textile executives and workmen, the year just passed saw tremendous increases in production; a near-miraculous job of conversion, and unprecedented plant expansion.

The Army's woolen situation was well handled in 1942 but we are still in need of increased production of such items as 32-oz. overcoating and Type I, Field Service blankets. Demands for other woolen items may show a slight decline.

Cotton duck is a bright spot, with production now approximating 50 million yards monthly, some 38% of it from converted plants. The cotton outlook in general is good, but the supply of combed yarns for twill is still below requirements and the Army will need increased production of drills and wind-resistant poplins. We look to industry to heavily increase production of narrow fabrics.

Maj. Gen. C. L. Corbin

Heavier burdens are in prospect for the dyers and finishers, who must prepare to meet new demands incident to camouflage and be constantly alert to provide numerous types of special finishes.

There will be no lessening of demands for new products. Old-style tents will be rapidly replaced, and industry may expect steady increases in demands for alpaca linings and for merino yarns used in socks and underwear. The growth of the Army requires constantly accelerated production of uniforms.

We look upon the Quartermaster Corps and the textile industry as a team that can meet all requirements and solve all problems, no matter how acute. Together they should be able this year to smooth out the peaks and valleys of production and deliver the goods our Army must have to win this total, world-encircling war which will decide whether the human race will live in freedom or in servitude.

Pitfalls in Print Preparation

Faults which do not appear serious to inexperienced help may prove costly

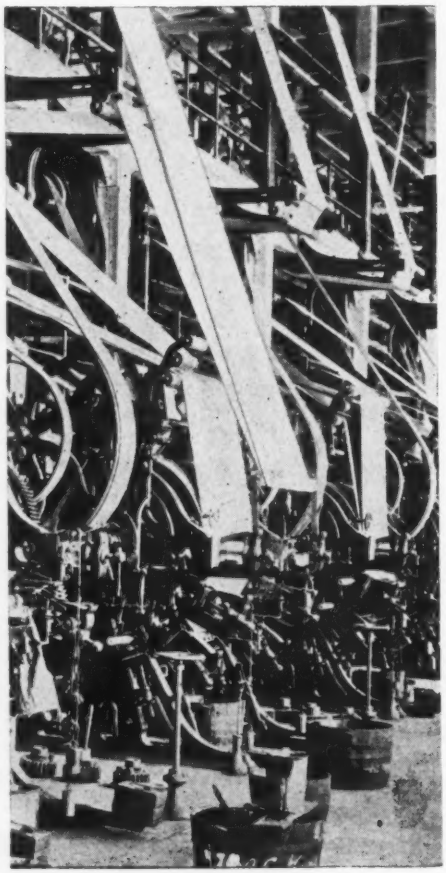
By FRANCIS NEWTON

FAULTS which do not seem to have much significance during the preparation of fabrics for printing often have more serious consequences at later stages of processing. In the first place, printing troubles may easily arise because of some small lapse on the part of the operatives who prepare the goods.

An instance of this type of fault made its appearance during the printing of a run of cotton fabrics. During the whole of this run "snibs" or small particles of dirt were constantly getting beneath the edge of the doctor cleaning blade. For some time the fault could not be located and all the usual remedies, such as straining the print paste, were tried in vain. It was discovered eventually that the trouble originated at the tenter frame where the goods were prepared for printing.

As usual, the goods had been brought out to the width required for printing and batched on a roll at the delivery end of the tenter frame. The supporting roller on which the goods were batched up was the usual wooden type and was covered with gray cloth in order to give a better grip on the batch of material. The gray cover had not been renewed for some considerable time, with the result that wear was very apparent. In this particular instance, the gray cloth had become so worn that pieces of yarn and lint were continually dropping off and being incorporated into the batch of white goods which was being prepared for printing. The upshot was that these pieces became dislodged during the running of the goods on the printing machine and fell into the colorbox from time to time. As the furnisher revolved to meet the roller, the small pieces of lint, etc., were carried up beneath the edge of the doctor blade to give rise to the trouble mentioned.

ANOTHER PECULIAR FAULT also had its source in the preparation of the goods. The fabrics were being prepared with a mixture of sulphonated oil and gum. The amount of sulphonated oil was small, but was included in order to enable the printer to get a better impression. The gum was employed for the purpose of giving the goods a slight stiffening so that creasing during the ageing process might surely be avoided.



Defects which show up in printing can frequently be traced back to faulty preparation of the goods.

Unfortunately too much gum was employed, and the result was that dusting-out took place during the printing of the goods. As the dried-in gum dusted out of the material, it became lodged in the engraving of the printing rollers. This dry gum became moistened with the print paste proper and, in course of time, became so lodged that the engraving was practically filled with foreign matter before the print paste came into contact with the roller. Poor impressions and weak colors were the obvious outcome and remedies had to be instituted.

For the goods which had already been prepared, the only remedy was to use a brush furnisher and thereby keep the engraving clear of deposits. In succeeding batches the proportion of gum in the material was considerably reduced. Also, the tension on the fabric passing through the ager was so adjusted as to prevent creasing.

BADLY SEWN ENDS during the preparation of fabrics may give rise to a considerable amount of trouble at later stages. One fault which is likely to occur is torn selvages during the ageing process. This happened recently in one print works with a light-weight fabric when the ends had not been properly pulled out during sewing. The first result of this was that at the entering end of the tenter frame the seams could not be guided evenly into the clips. This in turn caused the clip to take a much deeper hold on the fabric at this point and for some distance on either side. When tension reached its maximum at the full width of the frame, torn selvages resulted. This did not have to happen often to give rise to a considerable amount of damage during ageing. As the goods left the delivery end of the tenter frame, they were batched up as usual for printing, and one or two places where the selvage was torn found their way into the batch. The goods were printed without any serious mishap and went along to the ager.

As the goods passed through the ager under considerable tension, some of the loose strands of yarn at a torn selvage caught on one of the rollers and wrapped themselves around it. The result was that the tearing of the selvage continued until a seam was reached. At times, in fact, the tear continued past a seam and was not discovered until the goods emerged from the delivery end of the ager.

Another fault which also originated from a badly sewn seam and a torn selvage resulted in a short length of the selvage being torn off and lapped around a roller in the ager. This accumulation collected color from succeeding runs of cloth and led to smears and dirty crease marks on the fabric being aged.

New employees, particularly, must be cautioned repeatedly and checked up on frequently to make certain that they are preparing the goods properly and not letting some little fault slip by which will have serious consequences in subsequent processes.

Effect of Twist on Contraction

Result of studies made on single carded yarns with twist multipliers from 3 to 6

Contraction increases as the twist multiplier is increased, and the rate of change in contraction is more rapid as the yarn becomes coarser, according to a report contained in a recent issue of the *Bulletin*, published by Lowell Textile Institute. Following is a resume of a study of the effect of twist on the contraction in single, carded cotton yarns, conducted by Arthur J. Woodbury, instructor in cotton department, and Ralph P. Webb, a senior student at the Institute.

By ARTHUR J. WOODBURY
Lowell Textile Institute

SINGLE CARDED YARNS made from 1 1/16 in. Middling Texas Upland cotton of counts ranging from 12 to 29.25 and with a range of twists for each number calculated with twist multipliers ranging from 3.00 to 6.00 inclusive by half-number increments were used. All yarns were spun from single roving.

The actual length delivered by the front roll was determined by feeding a two-ply commercial knitting yarn, of about the same thickness as the ribbon of roving, through the nip of the front rolls and by allowing this yarn to wind around the scavenger roll.

An effort was made to secure 120 yd. of yarn on each bobbin. At the beginning and end of each test run all the strands of both the spun yarns and the measuring yarns were marked by an ink spot, directly in front of the front roll.

A summary of the results obtained is given in the accompanying table. Each figure in each twist multiplier column indicates the average percent contraction for that twist for the nominal yarn number in the column at the left. The nominal yarn number of standard count was the size for which the draft of the frame was set as close as was obtainable with the draft gears for the frame. This standard count was spun when using a twist gear calculated for a 4.50 twist multiplier. The draft for each standard count was maintained at this figure for all the other tests on that count.

The calculated percent contraction for any twist multiplier and yarn number is determined as follows: Subtract from average length of measuring yarn the average length of spun yarn, multiply by 100, and divide the resulting product by average length of measuring yarn.

The curves in the accompanying chart show: (1) that contraction increases as the twist multiplier is increased; (2) that the slope of the curve is less for low twist multipliers than for high twist multipliers; and (3) that the coarser the yarn, or the greater the number of fibers in a cross-sectional area, the more rapid is the rate of change in contraction.

The following equation will give an approximate contraction for counts within the range of 12 to 30 inclusive made from cotton of the character and staple mentioned above and having twists calculated within the twist multiplier limits of 3.00 to 6.00 inclusive. For counts between 20 and 30, omit the correction factor (A) (0.015) from the formula.

Formula:—Contraction in Percent =

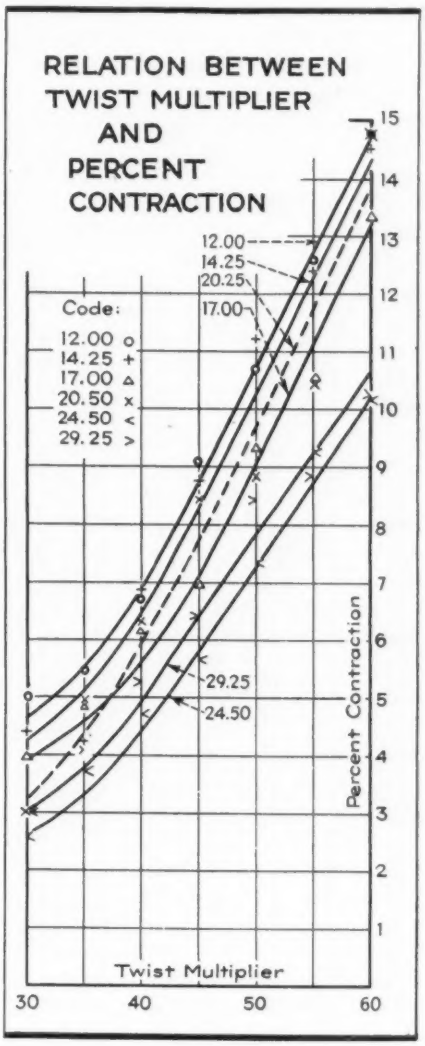
$$\frac{[K \pm (A)\ (0.015)\ (M^2)}{\sqrt[3]{C}}$$

A is the number of ½ number increments of twist multiplier above or below 5.00 (plus if below, minus if above).

C is the yarn count.

K is a constant, 0.967 for this type of yarn.

M is the twist multiplier.



Contraction in percent of single cotton yarn with various twist multipliers

Nominal Yarn No.	*Twist Multiplier* 3.00	3.50	4.00	4.50	5.00	5.50	6.00
12.00	5.02	5.46	6.72	9.11	10.70	12.60	14.75
14.25	4.38	4.17	6.96	8.75	11.24	12.38	14.52
17.00	3.98	4.85	6.18	6.97	9.30	10.56	13.33
20.50	3.02	4.96	6.29	8.41	8.81	10.48	14.75
24.50	2.56	3.70	4.72	5.66	7.34	9.28	10.20
29.25	2.98	4.08	5.26	6.44	8.40	8.85	10.29

Maintenance of Spinning Frames

Cleaning, oiling, fixing, and overhauling schedules to meet wartime conditions

TWO- AND THREE-SHIFT OPERATION of cotton spinning equipment and the necessity of using a large percentage of green help for cleaning, oiling, fixing, and overhauling the frames have made the problem of maintenance more difficult than ever before. Difficulty in recent months in securing some replacement parts has caused spinning overseers to have parts repaired that formerly were not considered worth repair. The new priority rating of AA-2X for repair parts should make it easier for mills to obtain such parts. But there can be no let up in the efforts to keep the machines in as good condition as possible. Best insurance against shut-downs is adequate inspection, cleaning, lubricating, fixing, and overhauling schedules. The schedules suggested below are based on present practice in several southern mills, with the exception of the recommendations on lubrication, which were abstracted from a technical bulletin issued by the Texas Co.

CLEANING OF SPINNING FRAMES is the first step in proper maintenance. Teach learners the correct way to clean, as a major part of routine cleaning is included in the spinner's job. A good daily cleaning schedule for spinners is the following: block off top of thread board every 2 hr.; brush base rail with whisk-broom every 8 hr.; pick bottom front roll every 8 hr.; wipe roving traverse and trumpets every 8 hr.; pick clearers four times every 8 hr. and remove chokes from top or bottom rolls at the same time; strip underclearers every doff; brush off ring rail once every 8 hr.; brush off all other parts once a shift. A good weekly cleaning schedule for spinners is the following: Wipe off base rails with waste; pick off roll weights and levers; remove all chokes from rolls; brush down head and foot of frame and pick front rolls; brush off roving traverse and pick roving skewers; brush off creel boards and other parts not receiving a regular cleaning.

Routine cleaning practices for sweepers and other general help include the following: Sweep alleys and under fronts of frames constantly — on a schedule; blow out from under frames once a shift; blow down overhead and blow out understructure of spinning frame, motor, pulleys, belts, and all parts of the machine not cleaned by spinner or roving hauler at least once a week. Oilers should remove all thread waste from shafts and studs and clean out all oil holes once a week.

USE LUBRICANTS OF THE HIGHEST QUALITY, as inferior grades can offset careful maintenance. On anti-friction bearings that require greasing with a high-pressure gun, avoid excessive pressure, as an oversupply of lubricant, packed tightly into the bearings, can cause them to run hot. Oil plain bearings, wooden bearings, top rolls and saddles, and bottom steel rolls with a hand oil can that dispenses a measured amount of oil. Fill reservoir type bearings from a convenient spout can. Oil spindles from an oil container that measures the amount of lubricant dispensed. Do not fill spindle bolsters or bearings with oil to the point where waste of the lubricant will result. Oil or grease cams, chains, and gears with spout oil can or paddle regularly. Schedule oiling and greasing to meet the present conditions.

Plain and reservoir bearings require oiling with a medium-heavy machine oil of a low pour test and carbon content suitable for medium and heavy lubrication.

Cylinder ball bearings require oiling with a medium-bodied straight mineral oil. Where grease is required, introduce lubricant with a high-pressure gun until the old lubricant appears. Use a chemically stable anti-friction bearing grease.

Wooden bearings require oiling at frequent intervals with a spindle oil that is resistant to oxidation and thickening in service.

Spindles require oiling every 120 hr. with a good grade of spindle oil that gives the lowest possible power consumption, starting torque, and temperature rise. It should also resist fogging, vibrating spindles, hunting, lagging, and sticking. Select oils to meet the requirements of speed and size of spindles. Oil bolsters when 20 to 25% of the oil has been used.

Top rolls, shell rolls, saddles and bottom front steel rolls require oiling with a heavy-bodied, straight mineral oil, free from carbon and gum-forming properties. Schedule oiling to avoid dry rolls.

Middle and back bottom steel rolls require a high-quality calcium base medium or hard cup grease that effectively resists moisture. If pressure fittings are used, select a grease of medium hardness that can be dispensed with a pressure gun.

Gears, cams, and chains require greasing with a heavy bodied mineral oil grease free from carbon and gum-forming properties. Use a good grade of soft or medium cup grease. If frame is equipped with pressure fittings, select a grease of medium hardness that can be dispensed from a pressure gun.

SYSTEMATIC INSPECTION, repair, replacement of worn parts, and over-hauling practices are necessary. Repair, or replacement of rolls, aprons, clearer boards, and clearers, and other short-lived parts are generally done by section men or helpers. Section men should replace badly worn spindles and bolsters and plumb spindles as necessary. Overhauling crews should completely recondition each frame at least once a year according to a definite schedule. Overhaulers should inspect frames some time before date set for overhauling and make a detailed report of supplies needed and condition of frames. Supplies should be ordered ahead and should be on hand before a frame is dismantled. Overseers should make personal check frequently to be sure that the machinery is being cared for properly.

ROUTINE FIXING AND OVERHAULING. Section men and their helpers do the day-to-day fixing and maintenance work on spinning frames. General helpers usually are required to put in new long-draft aprons, tapes, and bands, and clean the bottom steel rolls once or twice a week—usually with the frame running. The section man sees that all sides in his section are kept straight by the spinners, doffers, and roving haulers. The section man should care for his equipment generally as follows:

Rolls and aprons—Inspect back rolls

The daily schedule of cleaning for spinners should include picking cleaners four times in each 8-hr. shift.

at least once a week and remove badly worn or damaged rolls and replace with new ones. When changing rolls, the middle and front rolls should be moved back and the new roll put in front. Replace aprons on long-draft frames one side at a time if possible, and use old aprons that are in fair condition for spot replacements.

Spindles and rings—Plumb spindles as often as necessary in order to assure good work. Spindles can be marked and the plumbing done over the week end if a large number need plumbing. Plumbing is best done on a bare frame. Rings must be tight in the ring-holders and not rubbing on the yarn. Adjust, polish, or turn rings that are loose or nicked. Rings are best turned a frame at a time, and the old side should be nicked with a chisel to prevent the ring from getting turned again. Rings are usually handled at the time of the overhauling period.

Ring rails—Level the ring rail by using a ruler to measure the height of the top of the ring above the base or spindle rail. Ring rails should be thoroughly cleaned at intervals by removing them from the frame and boiling in a lye solution. This will not damage the rings or the rails.

Lifter rods—Remove lifter rods that are sticking and clean. Some mills oil lifter rods and some do not.

Thread guides—Adjust thread guides so that back inside of the wire loop is centered with the spindle. On frames with traversing thread boards, be sure that the lifters are not sticking.

Gears, studs and shafts—Keep gears in a gear cabinet where they are identified as to number of teeth and type of gear. Studs that are damaged should be replaced immediately to prevent damage to the gear. Noisy gears or worn or broken gears should be replaced as soon as new ones can be cut. Draft gears have small teeth that must be meshed closely to run properly, and therefore, they should always be kept in good condition. See that gears, studs, and shafts are properly cleaned.

Builder motion—Keep the builder motion in good condition by checking it once a week. Be sure that it is being cleaned and greased regularly.

Cylinders and tape idlers—Check these once a week to see that they are running true. Do not let damaged cylinders or idlers run any longer than it is necessary to get replacements.

Overhaulers work in crews of two or more and inspect and overhaul spinning frames on a schedule that provides for a complete overhauling of each frame at least once a year. Overhaulers can work over a spinning frame according to the following routine.

1. Remove bottom steel rolls, repair worn or bent sections, then clean and polish rolls and replace in the roll stands.

2. Line and level a frame using steel leveling blocks and wire or cord and a spirit level. Lining and leveling are usually done in the following order: line and level roller beams; push a block along roller beam under wire to locate the highest point on the beam; then bring all points on the beams to the level of the highest point. Check level of the frame with spirit level, from roller beam to roller beam, at intervals along the length of the frame. When the roller beams are level, check the ring rail, by measuring from base rail to top of ring at several points, to be sure that it is level.

3. Clean ring rails, rings, spindles, and bolsters; replace badly worn or damaged spindles, bolsters, rings; and plumb all spindles. In plumbing a spindle, pack base with ring rail at bottom and knock in with noil at the top. Run ring rail to top and bottom of traverse by hand. Set thread guide where wire back inside of guide loop is centered over spindle. This centers thread over bobbin or spindle tip. Smooth or replace damaged or worn guides.

4. Put new travelers on rings.

5. Reset all gears to mesh properly, and to prevent slippage or noise. Replace damaged or badly worn gears. Grease all gears carefully. Have oiler go over frame and oil or grease all moving parts needing lubrication.

6. Replace all other worn parts that can cause bad work, such as worn saddles, top rolls, long-draft aprons, and tapes.

7. Recondition all leather belts on those frames that are belt-driven. This consists of cleaning and applying dressing, however, excessive amounts of dressing must not be used.

Remodeled Opener-Picker Room

Green River Mills converts old, outmoded arrangement into new efficient set-up

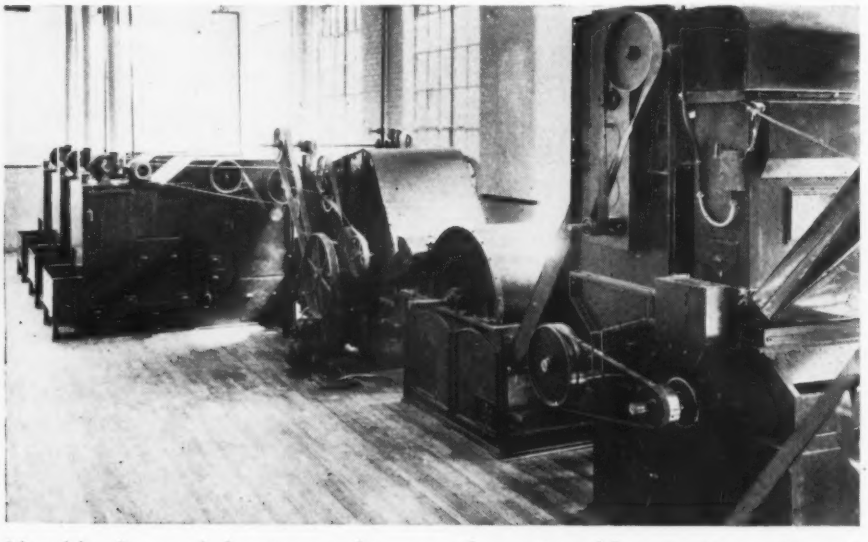
MODERNIZATION of textile mills through installation of new productive equipment is virtually at a standstill for the duration. Even machines needed for balancing production or other essential purposes can be obtained only with the specific authorization of the Director General of Operations of WPB. But it still is possible for mills to increase efficiency and improve products by rearranging and regrouping present machinery. Although remodeling of the open-picker room at Green River Mills involved the addition of some new equipment, the beneficial results obtained are due in large part to the rearrangement of machines and consolidation of several operations in one room. The following article, describing the way in which this mill converted its old outmoded set-up into a new, efficient layout, is, therefore, of particular timeliness and interest to all textile mill executives desiring increased opening-room efficiency.

Photo by Coze

Blending and cleaning machinery is arranged for efficient operation with a minimum of manpower.

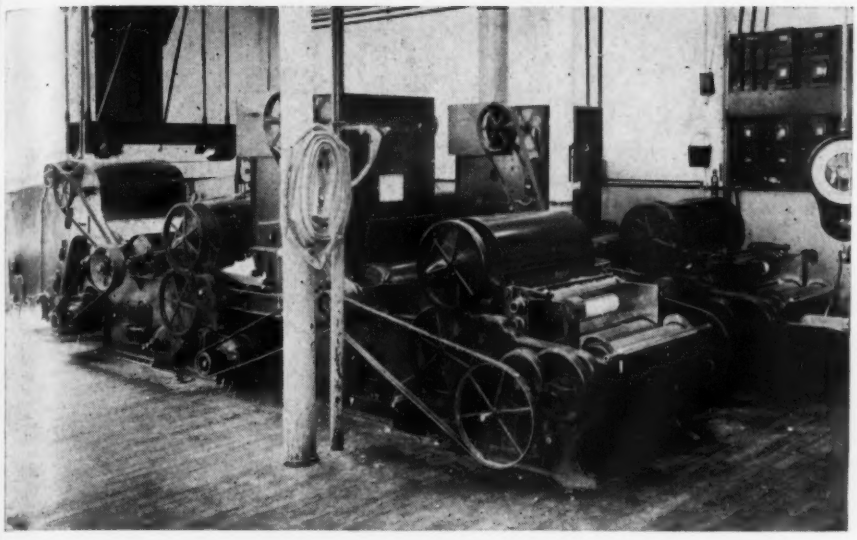
CONSOLIDATION of opening, blending, and picking operations in one room; rearrangement of machines; and installation of additional equipment at Green River Mills, Inc., Tuxedo, N. C., have resulted in better cleaning and blending, increased production, reduction in running time, and saving in labor and floor space. A particularly interesting feature of the remodeling of the picker room is that involved the conversion of an old-fashioned arrangement of bale breaker, cleaning equipment, and three-process picker to a modern set-up with one-process picking.

Originally, opening and picking equipment at Green River was located in a warehouse, and one line of conventional three-process picking in a small picker room adjoining the card room. Cotton was opened in the warehouse by the bale breaker and passed through a trunk system, a 41 in. Buckley-type down stroke cleaner, and a No. 6 condenser to the picker room floor. Here the cotton was fed by hand into the breaker picker, and from there to the intermediate picker, and then to the finisher picker. Roving waste was opened by a Model W3 Saco-Lowell roving and hard waste machine, and worked back into the breaker picker by hand feeding.



New blending and cleaning machines supplementing older opening equipment give additional cleaning and blending.

THE FIRST STEP in remodeling was to enlarge the picker room to accommodate the entire opening, mixing, blending, and picking operations and to provide ample room for laying down a large number of bales for the mix. The room is located at a corner of the mill building convenient to the cotton warehouse and the card room, and is well lighted. Old machines retained were a bale breaker; 41 in. Buckley-type, downstroke cleaner; No. 6 condenser; the breaker, intermediate and finisher pickers, and the roving and hard waste machine. New machines Saco-Lowell installed were three F-7 mixing and blending feeders, a 24-in. waste feeder,



One-process pickers with blending reserves increase production of finished laps. Floor space conserved is used for laying down mixes.

a mixing feed table, a No. 11 condenser feed, a No. 12 lattice opener and cleaner, a reversible distributor, two blending reserves, and two No. 7 eveners.

One additional breaker picker heater section was secured second hand to convert the intermediate picker into a Model F-2 one-process picker.

THE MACHINES were then arranged along the walls of the picker room in the following sequence: waste feeder, three mixing and blending feeders, a feed table, a hopper bale breaker, a 41-in. Buckley-type downstroke cleaner, a No. 11 condenser feed and No. 12 lattice opener, No. 6 condenser and a reversible distributor that feeds the pickers. The breaker picker section and No. 7 evener were coupled with the blending reserve and intermediate picker to make a Model F-2 one-process picker; and the breaker and finisher picker were coupled with a blending reserve and No. 7 evener to make a second Model F-2 one-process picker.

Both pickers are located at right angles to the opening and cleaning line of machines, in order to place the lap heads close to the card-room door. Mercoid switches on the machines automatically control the feeds of the line of machines, thus eliminating manual control in intermediate processes. The W-3 roving and hard waste machine and the waste bins are installed along the wall opposite the blending and cleaning line of machines. All floor space conserved by placing the machines and bins along the walls is used for laying down several mixes at once for conditioning.

At present the mill runs four different mixes. Thirty bales are put down for a mix—ten bales for each feeder—whereas formerly only ten bales were put down. One man collects the cotton from the opened bales of the mix on a hand truck and rolls it to each of the feeders as needed. In addition, he doffs and weighs the laps from the pickers, runs the roving waste machine, and feeds waste to the waste opener. Only one grade is run at a time, and the machines are thoroughly cleaned before another grade is put in.

Heavy compressed cotton, such as Sak, receives additional opening by passing through the hopper bale breaker in the line of opening and cleaning machines.

In addition to a 100% increase in lap production and the other advantages cited above, remodeling of the picker room and moving the opening equipment into it have provided additional storage space for cotton in the warehouse.

The labor costs were reduced from $3500 to $1500 per year. Besides the above-mentioned advantages, variation in yarn size has been reduced by about 50%.

What to Do About Order L-215

Under Limitations Order L-215 issued in December, a manufacturer wishing to purchase new textile machinery must apply to the Director General of Operations, WPB, using Form PD-744 for replacement or additional equipment for an existing plant, or on Form PD-200 for a new plant. Factors that manufacturers should consider in applying for a preference rating, are discussed below in an abstract of an article from the February issue of the *Needle's Eye*, published by Union Special Machine Co. Although the article deals specifically with sewing machines, the recommendations apply equally to other types of textile machinery.

IN REALITY L-215 is not the catastrophe many manufacturers first deemed it to be, as it is simply an extension of priority requirements to the lower-priced machine bracket which had not been touched by the original order L-83. Whereas it had been necessary to obtain a preference rating on machines costing more than $200, L-215 makes it necessary to obtain a preference rating on *all* new sewing equipment.

The direct reaction to the order by manufacturers was one of resignation; the feeling seemed to be: Why bother to apply for a preference rating? It won't be granted anyway. This, of course, was neither the intent nor the purpose of the order.

All industry today is geared for a country at war; some branches of industry and some companies within a given industry enter more directly into the war effort than others; and, essentially, that is the basis for priorities and preference ratings. Although we are inclined to weigh all things in terms of their military importance, it should not be overlooked that essential civilians needs command consideration also.

In considering whether or not he should apply for a preference rating, the user of sewing equipment should weigh the facts in his particular case and decide whether or not the equipment is essential. Once convinced in his own mind that the equipment is absolutely necessary either for essential civilian or military use, there should be no hesitation on his part as to applying for a preference rating.

The most important thing in making the application is to include all the facts and data in order to give the War Production Board a clear picture, so that they will be in a position to make a fair and intelligent decision.

Members of the Textile Division of WPB know what is necessary to clothe, feed, and equip our Army and Navy. They realize further that our civilian population must be taken care of. It is not their intention to restrict our war production, which means civilian as well as military, but rather their job is to see that it is increased and allocated properly. Therefore, there is every reason why manufacturers who are convinced of their need for equipment should make application for a preference rating.

Picker-Room Lap-Weight Control

Uniform blends, proper relative humidity, and well-kept machinery are necessary

Methods for maintaining correct sizings in the card room were discussed briefly in the Questions & Answers Department of our August, 1942, issue. The following article, which was prompted by that discussion, goes into considerably more detail on methods for controlling lap weights.

By RAYMOND W. MITCHEM

CONTROL OF LAP WEIGHTS in the picker room is of paramount importance throughout the entire mill as practically all operations subsequent to picking are affected by any variations that occur in the picker laps. There are several prerequisites to proper control of weights or sizings.

First, a uniform blend of stock is necessary. This is contingent upon the condition of cotton being used—whether it is part or all flat cotton, compressed, or high density, and the grade. Whatever it is, the blend must be uniform.

Second, humidity should be controlled throughout the plant. Most mills have sufficient humidifying equipment to maintain a fairly uniform condition. Determine the proper relative humidity for each department, and see that this condition is maintained.

Third, pickers must be in good mechanical condition.

Fourth, a regain indicator should be employed for weighing each lap.

The only way to make uniform yarn is to have uniform laps to start with; and the pickers must be in good mechanical condition if they are to make uniform laps. Keeping pickers in good mechanical condition involves the following:

1. The dampers on condensers must be set to permit uniform flow of cotton.
2. The cotton must be kept at a uniform level in the hoppers.
3. Keep good leather on screens.
4. Keep cages clean so as not to affect the draft.
5. Fan belts must be tight.
6. Flues must be clean.
7. All dampers and doors must be set properly.
8. There must be no back draft.
9. The eveners must work properly; react instantly.
10. Grid bars must be set properly.
11. Loggerheads must be set so as to give equal pressure on each end of the lap pin.
12. All beaters must be operating properly and kept sharp and running at the correct speed. Above all, keep the entire machine well oiled and free as possible from chokes.

SACO-LOWELL LAP METER RECORD

PICKER RM. NO. 1 MACH. NO. 9

STANDARD WT. PER YARD 15 OZ.

WEIGHT LAP INDICATOR

STANDARD TOTAL WEIGHT OF LAP, WITH ROD 49 LBS.

ACTUAL TOTAL NET WEIGHT OF LAP, LESS ROD 46.25 LBS.

TEMPERATURE { WET ..... DRY .....

REL. HUMIDITY .....

ACTUAL AVERAGE WEIGHT PER YARD 14.9 OZ

NO. OF YARDS WITHIN LIMITS 48

WITHIN LIMITS % 100%

TOTAL NUMBER OF YARDS WEIGHED 48

NOTES

Laps weighed 49

15.30

14.75

(3.59% high & low variation)

TESTED BY John Doe

DATE 9-18-42

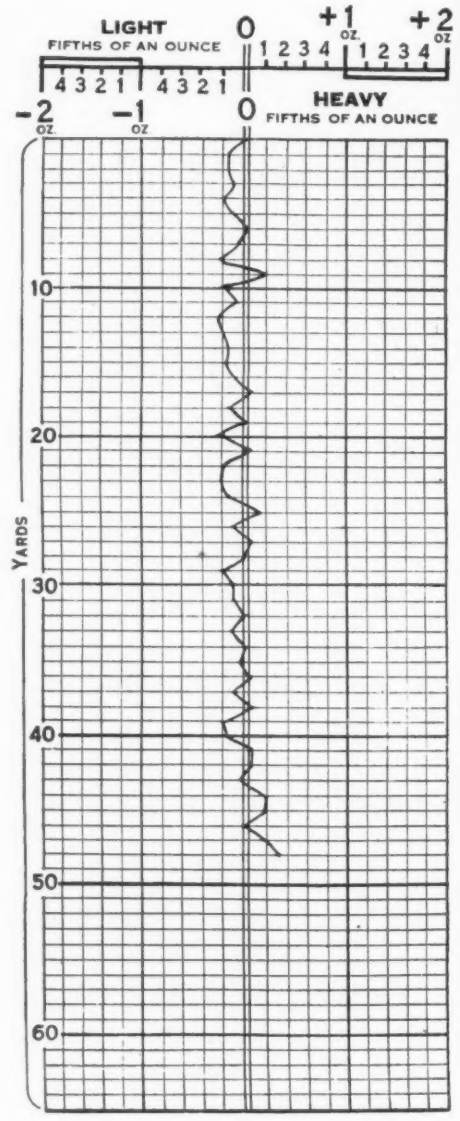


Fig. 1. Lap meter record of picker lap of excellent uniformity.

Test at least one lap from each picker each day for uniformity and weight. By so doing, you will have a check on the operator.

How is one to know when a picker is making uniform laps? Of course, the lap can be measured yard to yard by hand, but at best this is very crude. Use of a lap meter equipped with new balance-type scales is a far better method.

What are the elements of a good lap?

1. Variation, yard to yard, not more than plus or minus ½ oz., including the first two and last two yards.
2. Stock well blended.
3. Uniform thickness and distribution of the cotton in the lap.
4. Even selvages.

The accompanying charts show the type of record obtained by use of the lap meter. The chart shown in Fig. 1 is the record of an excellent lap. The chart shown in Fig. 2 is the record of a very bad lap. Subsequent processes will not be able completely to compensate for the wide variations in this lap, and there will be variations in the product made from it. Undoubtedly the picker making this lap was in a bad condition and required a thorough overhauling and proper adjustment.

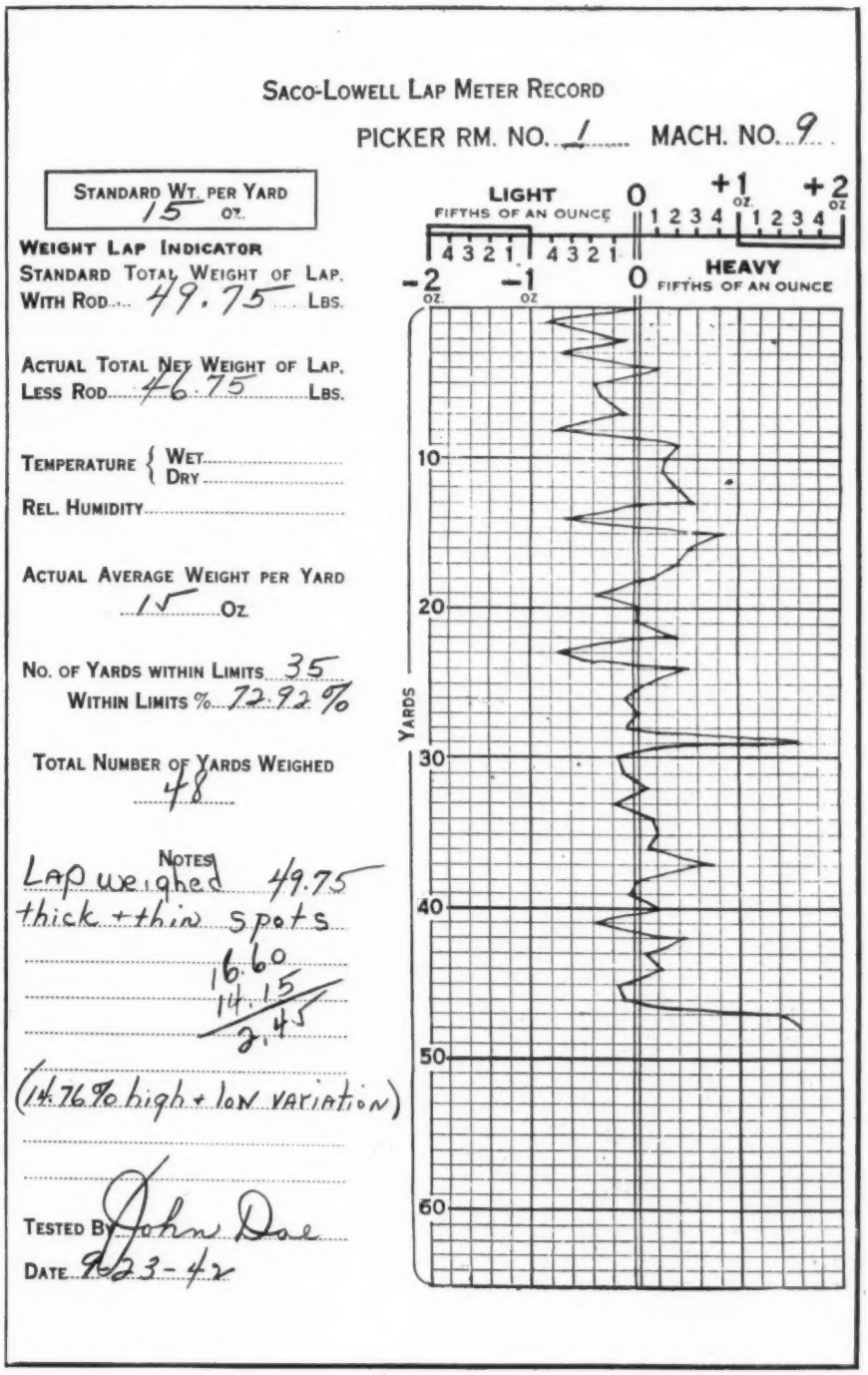
A STANDARD WEIGHT for laps should be set up, and adhered to. For weighing laps, the regain indicator should be used religiously. The indicator is very simple in design and operation; when set, it compensates for the presence or absence of moisture above or below the desired regain. Some mills endeavor to maintain a relative humidity of 50 to 60% in the picker room and to maintain a regain of 7 to 7½% in the laps. Many mills, however, do not have humidifiers in the opening and picking departments, and regain normally varies from 4½ to 6½%.

One mill with which the writer is familiar changed roving and spinning draft gears practically every day in order to compensate for variations in lap weights and to keep yarn and fabric weights within customers' specifications. Then this mill installed a lap meter and lap regain indicator. For the first few days after these devices were installed weights were upset and extensive changes in draft gears were necessary. However, once the draft gears were set properly, no further changes were necessary on drawing and roving weights and only occasional changes on spinning to make a fabric lighter or heavier. During extremely damp periods, when the humidity in the spinning room rises above standard, the yarn weights tend to get on the heavy side. No change in draft gears is necessary, however, as the yarn assumes the proper weight when it attains normal regain.

REGAIN READINGS shown by the indicator should be checked frequently with a sling psychrometer and hygrometric scale. Any discrepancies can be traced to their source and remedied.

It should be mentioned here that regardless of how much is done in the picker room to insure uniformity, it is necessary in subsequent operations to maintain the relative humidity within close limits, as any wide variations in humidity will offset the good work in the picker room. Also, as stated on page 102 of the August, 1942, issue of TEXTILE WORLD, regain correction of drawing weights is essential.

A great deal could be written about the human element involved in weight checking. Suffice it to say the person must be thoroughly competent, as one change in the wrong direction will throw the weights of the entire mill out of line. For this reason, the weights for the entire mill should be under the supervision of one well-trained, responsible individual who issues instructions for all changes. A wide-awake person in this position can save many times his salary by keeping the weights right.


SACO-LOWELL LAP METER RECORD
PICKER RM. NO. 1 MACH. NO. 9
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STANDARD TOTAL WEIGHT OF LAP, WITH ROD 49.75 LBS.
ACTUAL TOTAL NET WEIGHT OF LAP, LESS ROD 46.75 LBS.
TEMPERATURE { WET DRY
REL. HUMIDITY
ACTUAL AVERAGE WEIGHT PER YARD 15 OZ
NO. OF YARDS WITHIN LIMITS 35
WITHIN LIMITS % 72.92 %
TOTAL NUMBER OF YARDS WEIGHED 48
NOTES
Lap weighed 49.75
thick + thin spots
16.60
14.15
2.45
(14.76% high + low variation)
TESTED BY John Doe
DATE 9-23-42
LIGHT
FIFTHS OF AN OUNCE
4 3 2 1 4 3 2 1
0 +1 OZ 1 2 3 4 1 2 3 4 +2 OZ
-2 OZ -1 OZ 0 HEAVY FIFTHS OF AN OUNCE
YARDS
10
20
30
40
50
60

Fig. 2. Lap meter record of picker lap with bad variations.

Felt Is Solving War Problems

Has many military and industrial uses; major steps in production illustrated

WOOL FELT IS FIGHTING with our soldiers on every front, flying with our pilots and gunners and with our tank crews. In industry it is used in the machine shops that produce our guns, our famous Norden bomb-sight, our tanks, etc.; in the home we find felt an integral part of the refrigerator, a part of desk lamps, serving as pads for ash trays, and even a part of clothing and shoes.

Our armed forces are using wool felt in chevrons for uniforms, as lining for soldiers' helmets, under the mounts of gun turrets in fighting planes, as insulation in airplane fuselages and wings, and as a means of reducing vibration in army tanks. Among other military uses are in canteens, gas masks, dust masks, mackinaw linings, soles for shoes, parachute landing pads, jungle pack saddles, ammunition cases, etc.

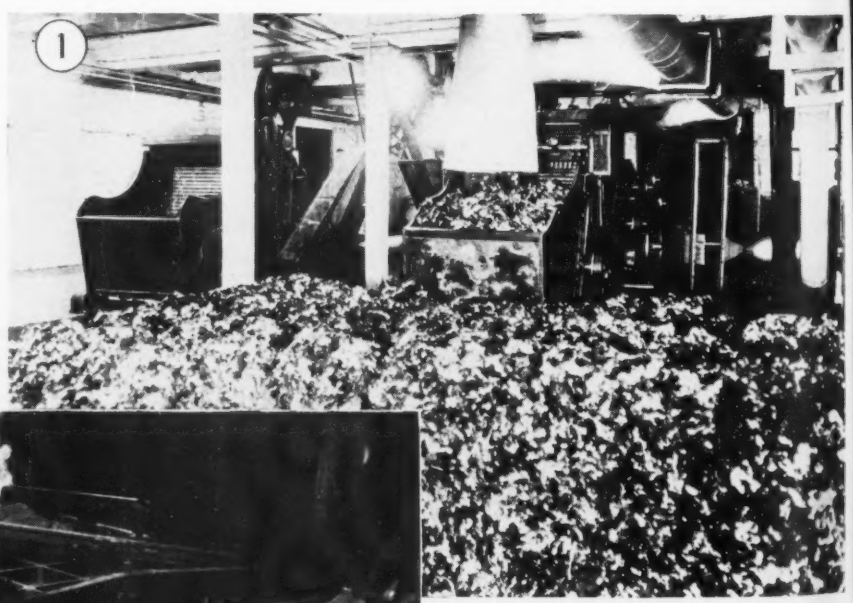
In machine shops and factories felt serves the double purpose of isolating vibration and providing non-destructive attachment to floors. Many types of machinery mounted on felt pads by means of cement adhesives require no further attachment, and hence can be readily shifted to accommodate changes in production plans.

Some installations use felt mountings to avoid the transmission of vibrations from a large number of high-speed machines to the manufacturing building. Machine tools, sheet metal equipment, and textile equipment, such as looms, make extensive use of felt mounting.

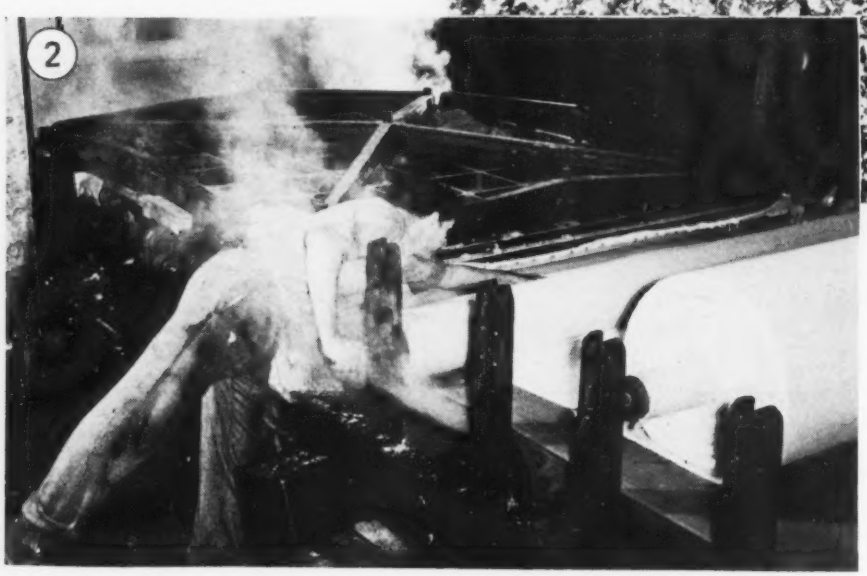
Successful operation of surgical intravenous feeding sets depends upon the use of a felt washer to filter air. Precision boring of gun barrels necessitates isolation from vibration by means of felt. Inclosed airplanes are insulated with it, and felt gaskets are used to protect control leads and instrument piping in planes from vibration.

Felt is highly resistant to abrasion when in contact with moving parts of machinery. Therefore, it is widely employed as a polishing material itself, and as a carrier for abrasives used in polishing lenses, etc.

Wool has a natural tendency to absorb moisture, which gives felt multiple uses as a wicking material. It is an excellent heat insulator and exhibits marked indifference to the effects of temperature from 250°F. down to 100°F. below zero. It can be flameproofed, and rendered water resistant, mildewproof, and mothproof. Shortages of other materials, has broadened the



1. Wool, clippings, and various other fibers are laid down to form a blend. The blend is fed into a mixing picker and thence blown to storage bins previous to carding. Regular type of woolen card is employed for carding the stock and special attachments form it into batts.

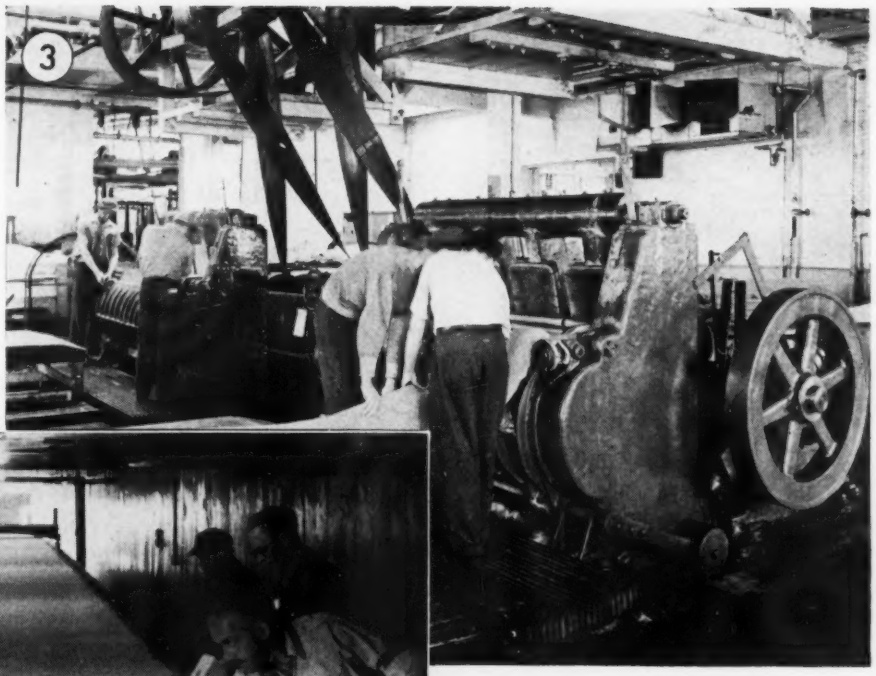


2. Hardening is a process that causes the fibers to interlock and tangle, forming them into a felt-like sheet. A batt of loosely intertwined fibers is unrolled to form a blanket which is thoroughly wetted down and then steamed. It is carried under a platen — the heavy cast-iron grid shown in the illustration — which is violently agitated and at the same time pressure is applied to the batt.

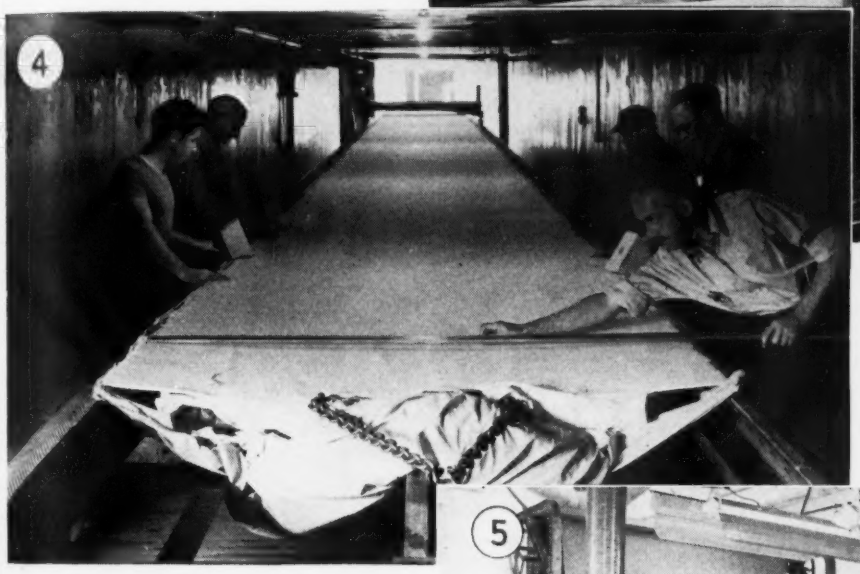
commercial applications of felt as a substitute for rubber, plastics, cork, wood, leather, etc.

For civilian use in blacking out windows its qualities are excellent. It is almost completely opaque, even in decorative hues. It drapes naturally, lends itself well to temporary hanging, and is readily available.

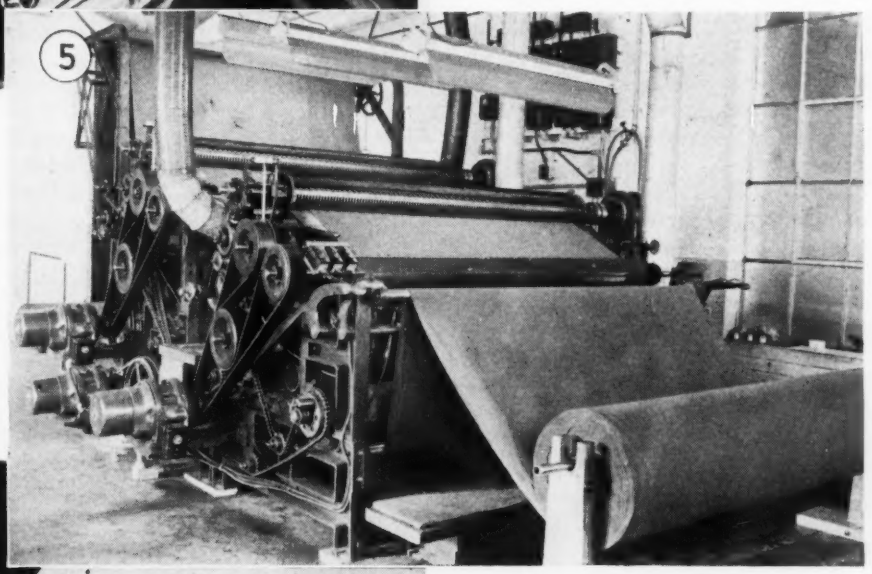
The major steps in the manufacture of wool felt are shown in the accompanying illustrations which are reproduced through the courtesy of the Felt Association, Inc.



3. After hardening, the wool felt goes to the fulling mill, where in a moist, steamy state, it is kneaded by large power hammers. This process shrinks the material and imparts the desired degree of density.



4. Roll felt after leaving the fulling mills is stretched on tenter frames in drying ovens where the material takes a permanent set. For heavy felts, this equipment is massive and requires that many tons of pressure be applied through heavy chains and screw jacks. Light-weight felts are dried in the usual type of inclosed dryer as used for drying woolen fabrics.



5. Shearing of the finer grades of wool felt produce a surface of absolute uniformity. Thickness of felt is controlled during shearing with an overall tolerance of 0.005-in. Incidentally, the shear is mounted on felt pads and secured to the cement floor by special adhesives. No lag screws or bolts are used.

6. Finishing of firm felts is accomplished by sanding and brushing to form a smooth, even surface. Close control of thickness is maintained.

Planning the Post-War Power Plant

Take advantage of high-pressure boiler and high-temperature hot water heating

Before the war there was a definite trend in the textile industry toward installation of high-pressure boilers, but few, if any, textile mills in this country had begun to utilize high-temperature hot-water systems for heating buildings and for process work. In the following article the author describes the way in which use of high-pressure boilers makes it possible also to employ high-temperature hot water throughout the mill. The two arrangements discussed merit careful consideration by all textile mill engineers and other executives concerned with post-war modernization.

By PAUL L. GEIRINGER
Licensed Professional Engineer

FOR HEATING AND PROCESS WORK in textile mills, high-temperature, hot water has numerous advantages over methods usually employed in this country. These advantages have been noted by the author in two earlier articles which appeared in the January and February, 1942, issues of TEXTILE WORLD. The present article describes the design and layout of plants for producing high-temperature hot water. At present most mills will find it difficult or impossible to obtain the materials necessary for conversion of present equipment to high-temperature work. On the other hand, this is an ideal time for mill owners and engineers to familiarize themselves with new developments and to make plans for the improvements to be made in their plants at the moment when lack of necessary materials no longer prohibits such moves.

Temperatures of 300 to 400°F. appear to be the most appropriate for heating buildings, for indirect heating of dyebaths and other processing solutions, and for drying operations. Steam to produce these temperatures would have to be between 75 and 100 lb. pressure. In most mills, boilers are operated at 200 to 300 lb. pressure, and steam for heating and process work is distributed at pressures of 10 to 30 lb.

Use of low temperatures and low back-pressures was appropriate when maximum boiler pressures were 200 to 300 lb. But there seems to be no justification for continued use in textile mills of the comparatively low boiler pressures now generally employed.

FOR LARGER MILLS which produce their own power, boilers of 600-lb. pressure seem to be adequate. A particularly satisfactory layout is shown diagrammatically in Fig. 1. Included in this layout is a two-cylinder turbine, with a high-pressure cylinder expanding up to 75 or 85 lb. pressure and a low-pressure cylinder utilizing the remaining pressure and temperature drop down to the lowest condensation level. From Fig. 2, it will be noted that the enthalpy drop (total heat drop) of the steam in a turbine operating at 600 lb. pressure and 775°F. and 85 lb. gage back pressure is 190 B.t.u.

The enthalpy drop occurring between 200 lb. boiler pressure at 600°F. and 15 lb. gage back pressure is 180 B.t.u. That is, the high-pressure cylinder of the turbine has approximately the same enthalpy drop available for power production as is obtained with equipment operating at 200 lb. pressure at 600°F. and 15 lb. gage back pressure. The low-pressure condensation cylinder has a much greater enthalpy drop, as can be seen also from Fig. 2, distances *BC* and $B_1 C_1$; and this more than compensates for any small difference in the efficiency of the high-pressure cylinder.

Compared with older low-pressure plants, a high-pressure plant such as that described above is at least equal as regards kilowatts produced for fuel consumed, and, in addition, possesses the great advantage that the steam exhausted by the engine can be used efficiently anywhere within the mill. If this steam, leaving the turbine at 75 to 85 lb. pressure, is immediately converted into high-pressure hot water of about the same temperature, an efficient distribution of the heat for process and space heating is achieved.

OBJECTIONS OVERCOME. Formerly the large losses inherent in the condensation of steam of 75 to 80 lb. pressure have been considered such an important drawback that distribution at lower pressure has been preferred. With the introduction of high-temperature hot water as a heat carrier, this objection has been overcome. Use of high-pressure hot water has been made especially practicable through the development of steam converters transforming the turbine exhaust at 70 to 85 lb. with the loss of only a few degrees (3 to 5°) directly into clean, high-pressure hot water, free of gases and scale, which is ideally suited for circulation within the mill. The boiler feed water is drawn from the excess high-pressure hot-water thus produced and forms an excellent feed water. The make-up of the water for the high-pressure boiler is almost completely eliminated. A combination of the turbine condensate with

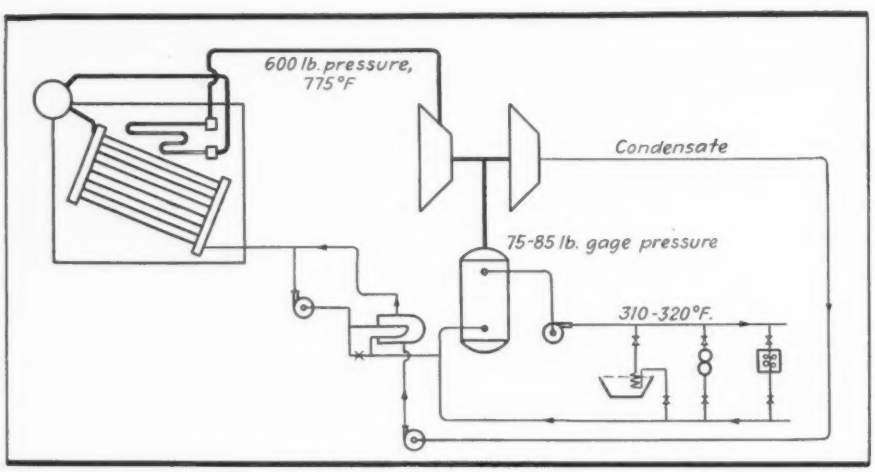


Fig. 1. Diagrammatic sketch of power plant and heating system for textile mill generating its own power.

the excess water of the hot-water heating system provides feed water at the temperature required for deaeration and can be fed directly to the boiler economizer.

There is no need for water purification equipment or for flash tanks for taking care of the considerable quantities of steam developed by expanding the condensate. Addition of phosphates and other chemicals to the boiler water and the alkalizing and cleaning of the water within the boilers suffices to keep the boilers, turbines, and pipe lines free from scale and corrosion. Because of its simplicity, a 600-lb. plant does not require any more service or care than a 200- to 300-lb. plant.

A STEAM PRESSURE OF 600 LB. for the turbines of sizes ranging between 1,500 and 5,000 kilowatts, as required for the larger textile mills, is not too high. The volume of the steam is still large enough so that the turbine blades need not be too small, and the over-all efficiency of such a turbine can, therefore, be considered as satisfactory. However, the writer does not advise the raising of the temperature to much over 775°F. A large surface condenser for obtaining a high vacuum is justified in most instances.

For mills which do not produce their own power, the writer recommends a boiler pressure to 150 to 180 lb., and suggests pumping the water around the mill at a temperature corresponding to that pressure. A diagrammatic sketch of a suitable layout for such mills is shown in Fig. 3.

The increase of the flow temperature from the level of 310 to 320°F. (corresponding to a pressure of 75 to 85 lb.) to a level of 360 to 370°F. (corresponding to 160 to 180 lb.) results in a further decrease in pipe size. Still larger temperature drops and smaller heating surfaces can be utilized. In this way a medium-sized textile mill can obtain all the heat which is required for process and space heating by a header of only 3 to 3½ in. diameter. Most equipment can be supplied with heat through small pipes, up to 2 in. in diameter.

Good insulation for all pipes is essential. The fact that the return pipes can be conducted overhead and do not have to be buried in inaccessible trenches makes it possible to insulate them properly and to keep a constant check on their condition.

DRY CANS AND SLASHER CYLINDERS constructed for a maximum of 10 lb. pressure frequently are located at some distance from the boiler room. In such instances they should be heated by secondary steam producers installed near the dryers or slashers. If, on the other hand, the dryers are near the power plant, application of steam reduced in pressure for these machines is advisable.

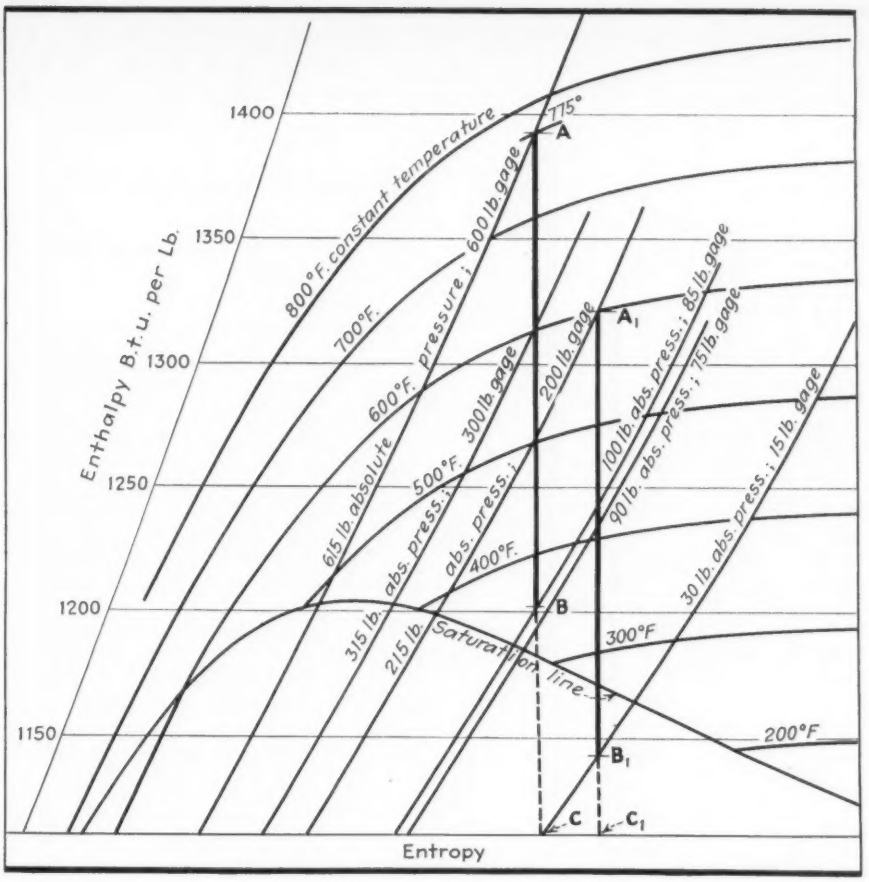


Fig. 2. Chart showing total heat made available for power production when steam pressures are reduced from 600 to 85 lb. and from 200 to 15 lb. (Adapted from J. H. Keenan and F. G. Keyes' Mollier diagram published by John Wiley & Sons, Inc.).

It is not good practice, however, to arrange the whole steam bleeding system in accordance with the pressure of those machines, the design of which may be altered in the not-too-distant future. In Europe most of the low-pressure dryer and slasher cylinders have been superseded by those of 45 to 50 lb.

Although the first cost of the high-pressure high-temperature systems advocated above may be somewhat higher than that of present systems, the savings in fuel and operating expense will counterbalance any additional installation costs in a short period of time.

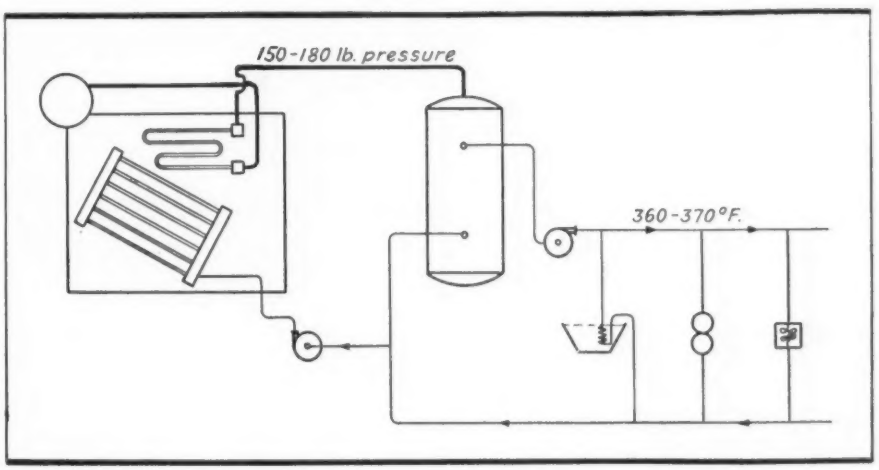


Fig. 3. Diagrammatic sketch of power plant and heating system for textile mill not generating its own power.

Taking the Month-End Inventory

Methods which have simplified the work in a progressive southern hosiery mill

By DON BRADFIELD

FOR TAKING THE MONTH-END INVENTORY of finished goods, a southern hosiery mill has adopted a procedure which simplifies the work and helps to maintain accurate records. The following suggestions are based on the methods which have proved successful in that mill.

1. Have all work on inspectors' tables inspected, boxed, and placed in bins according to style and color, with all broken boxes on top of full ones. Avoid having empty boxes sitting around.

2. After the inspectors finish work to be inspected, post number of dozens of firsts, irregulars, menders, odds, and redyes of each style and color in finished-inventory book.

3. Take a ruler and draw a line under the figures across each page and write "inventory" and "date."

4. After the finished goods have been counted and checked, enter the number of dozens of each style and color in the finished-inventory book under the line drawn across each page. When there is a large stock of finished goods, the foreman can have five or six girls who work in the finishing department do the counting. He should always select the most conscientious workers to count the finished goods.

5. Instead of having just a plain piece of paper on which to write the counts, use a ticket such as is shown in Fig. 1. After the tickets have been filled out, they are placed in the bins with the goods.

6. Never remove these tickets from the bins until the goods have been checked, and the tickets have been signed.

7. Never put up orders to be shipped out of finished stock until all inventory has been recorded and checked.

8. After all the stock has been counted and checked, the tickets are taken up and assorted according to style and color and recorded on a form such as is shown in Fig. 2. Clip all tickets (Fig. 1.) to this form and then file.

FINISHED INVENTORY

Date _____ *Style* _____

Color _____

Quality _____

8½	9	9½	10	10½	11	Total

Counted by _____

Fig. 1. Ticket for recording quantity counted of each size, style, and color of finished goods.

INVENTORY OF FINISHED GOODS AS OF

Date _____ *Style* _____

FIRSTS	
SECONDS	
IRREGULARS	
REDYES	
MENDERS	
UNMENDABLES	
BOARDED *(Not Inspected)*	
DYED *(Not Boarded)*	
TOTAL	

Fig. 2. Form for recording number of firsts, seconds, irregulars, and other classes each style of hosiery.

Preparing Blends for Wool Cards

Hints offered to mill men for oiling of mixes, virgin wool, and substitutes

By N. J. CROFTS

EMULSIONS of oil and water aid in the processing of wool blends and are usually applied to the stock as it passes into the picker. The total amount of oil should be put on as evenly as possible during the first run of the batch so that any unevenness of application will be eliminated on the second run. Well moistened stock condenses better into roving. It spins better and twists into a more compact thread with a higher breaking test. Oftentimes yarns spun from a mix that is not up to standard can be greatly improved, even when using the same amount of twist, simply by the addition of more emulsion to the blend. This is especially true of reworked wool mixes. Extra oiling causes the roving to condense firmer; a moist stock takes the twist in spinning much better than a drier stock; and woolen yarns made with less twist are more desirable in order to produce a good cover on the finished fabric.

Most of the wool oils sold today contain an emulsifying agent and need only to be mixed with hot water and brought to the boiling point to obtain an emulsion that will not separate. Rich emulsions of 1 qt. oil to 1 qt. water are used on high-grade wool mixes and, as a matter of economy, much leaner emulsions are used on the lower grades of reworked wool stocks. Any great deviation from standard in the oil content of the emulsion will cause a variation in the actual weight of the yarn and the weight per yard of the finished fabric.

THE AMOUNT OF EMULSION contained in a batch of all-wool stock should be from 14 to 16 qt. per 1,000 lb., some allowance being made for evaporation and the beating action of the picker, which causes a small percentage loss. Included in this amount should be the percentage of moisture contained in reworked stocks that have been previously oiled when being processed, and allowances must be made for blends containing any great percentage of the substitute fibers of vegetable origin, as these fibers need little moisture and card better when only slightly moistened.

Blends of mixed fibers should be handled in a different manner from all-wool mixes. The wool stock should be run through the picker separately and oiled. Next the whole batch is laid down in alternate layers of the oiled stock and the dry substitute stock that has been run through the picker twice without oiling. The rayon or cotton, as the case may be, will absorb sufficient moisture from the oiled stock.

A 10% increase or decrease in the amount of moisture on the same type of blended stock may mean that much variation in the cloth weights. This variation in moisture content before blending and oiling can be the cause of off-shade batches, and is a factor to be reckoned with when weighing up the different colors. If one certain color is weighed right off the dryer when absolutely devoid of moisture and that same color is weighed for the next batch after it has been off the dryer several days or has had sufficient time to attain the normal regain, there will be a difference in the actual amount of fiber.

Some of the lower-grade mixes are benefited and the yarns made stronger by the application of more liberal quantities of emulsion, which seems to hold the shorter fibers together better during spinning. In no event should the stock be too wet, as this condition causes a great variation in the roving weights during carding. Also, a specky condition of the roving is likely to result from too much moisture. Lots that show wool specks or neps should be run as dry as possible. Certain shorter fine wools and stocks have a tendency to roll and form pills, and an excess of moisture accentuates this characteristic.

ALL ANIMAL FIBERS are subject to static caused by friction; and wool blends, if run too dry or even with the standard amounts of emulsion applied, give much trouble during dry, cool weather from static generated by the rub of aprons on the card condensers. When this condition is at its worst, the strands of roving repel or fly away from one another—likewise the fibers in each strand of roving. To a certain extent, this interferes with condensing and may cause a drop in the yarn strengths. The expedient generally used when the card condensers are not equipped with static neutralizers or the entire room is not humidified, is to apply more emulsion to the blends. Static, though ever present, makes its appearance in a troublesome form soon after the first frosts of fall. Uniform atmospheric conditions must be maintained.

A great many mills, especially those using large quantities of reworked stock, experience considerable trouble with metal objects in the stock. These damage the metallic breasts on the cards, and many of the smaller objects pass completely through the breast to damage the wire of the card clothing. An electromagnet in the form of a rod mounted at and across the top of the spike apron of the blending picker feed powerful enough to pull out all such metal would guard against this trouble. Such equipment would be expensive, but prevents damage to a number of metallic breast rolls.

Emulsion in batch should be 14 to 16 qt. per 1,000 lb.

Letters to the Editor

"Average American Citizens"

WASHINGTON, D. C.

Editor, TEXTILE WORLD:

When TEXTILE WORLD came to my desk this morning, I first glanced at the very effective front cover. I turned to your editorial page and was much impressed by your editorials, "White Christmas" and "Stark Madness." Not only am I in hearty accord with the philosophy of these editorials, but I feel that they will be really helpful in influencing opinion. I have always felt that the reader of a business paper is not only a business man, but an average American citizen like you and me. I think occasionally he is willing to forget business for a moment even when he is reading his trade publication and welcomes being spoken to as an individual.

PHIL H. STITT, Chief
Business Press Unit,
Office of War Information

Defects in Woven Fabrics

HARTFORD, CONN.

Editor, TEXTILE WORLD:

After reading and seeing your article and pictures on Imperfections in Woven Fabrics, I was wondering if it would be possible for you to obtain and send me either the Glossary of Textile Terms Relating to Textile Materials issued by ASTM, or one of the reprints of the entire series on Weaving Imperfections ordered by the Army Quartermaster Corps.

These would be extremely interesting to me as I find them a great help in locating and illustrating fabric defects as they come up in my work as a field inspector for the Army Quartermaster Corps.

JEROME J. STERN
Inspector, Q. M. C.

Outstanding Contribution

GRANITEVILLE, S. C.

Editor, TEXTILE WORLD:

We have a copy of your pamphlet, section six, entitled "Defects In Woven Fabrics, Photographs and Definitions" and we think it is a most outstanding contribution to men who prefer a guide in producing quality cloth.

We would like very much to have about two dozen copies of this pamphlet for our men to use as a guide. Please let me know if these can be furnished.

W. F. DAVIS, Assistant to the Supt.,
Graniteville Co.

"Has the Highest Rating"

JEWETT CITY, CONN.

Editor, TEXTILE WORLD:

You're doing a swell job and the writer has no criticism to offer. Several textile periodicals come into my home and the TEXTILE WORLD has the highest rating. However, I would suggest that you do everything possible to get the year's index out with the December issue. Your publication is loaded with valuable information and the year's cumulative contents should be made available as early as possible.

ROBERT NEWELL

"Meritorious Service"

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

During the past year we have received numerous form letters from your Department giving us the names of inquiring readers for our literature, price lists or circulars. This shows a fine spirit of cooperation and we want to express our gratitude to you for this meritorious service to subscribers.

HERBERT H. HATCH, Director,
Hatch Textile Research

"I Am but One"

DANVILLE, VA.

Editor, TEXTILE WORLD:

I want to congratulate you on the current editorial in TEXTILE WORLD. ("I Am but One, but I Am One.") If we could get this over to every worker in the country there wouldn't be any "bottlenecks" and few "seconds."

Just keep "telling us" every chance you have.

L. A. GRAYBILL
Riverside & Dan River
Cotton Mills, Inc.

Textiles That Glow

PATERSON, N. J.

Editor, TEXTILE WORLD:

In your October 1942 issue of TEXTILE WORLD, you had an article called "Textiles That Glow in the Dark." We are interested in processing some of our materials with these phosphorescent compounds so that they possess these glowing qualities.

We would appreciate receiving names of some of the companies that sell these compounds and pigments.

H. DEGROOT
Modern Central Silk Dyeing
& Finishing Co., Inc.

"Helpful and Interesting"

DANVILLE, VA.

Editor, TEXTILE WORLD:

We are finding TEXTILE WORLD helpful and interesting in a number of ways.

May we quote excerpts and use adaptations from it in our weekly Training Tips and in our learner report which circulate to all Superintendents, Overseers, and second-hands? You understand, of course, that credit will be given your magazine for any information used.

We believe that in this way we can secure a more thorough reading of your magazine by occasionally calling attention to certain articles which we consider of special interest.

GEORGE E. ARCHER, Coordinator of
Training, Personnel Department,
Riverside & Dan River
Cotton Mills, Inc.

From South America

MEDELLIN, COLOMBIA, S. A.

Editor, TEXTILE WORLD:

Please accept my congratulations for the excellent material you are presenting in TEXTILE WORLD which has been coming to me regularly, although a little delayed, and occasionally with some pages taken off.

G. LONDONO

Interest in Slidefilm

BOSTON, MASS.

Editor, TEXTILE WORLD:

In your February, 1943, issue you had an article entitled "Slidefilm Teaches First Aid." The author mentioned that "A slidefilm kit-set is available, etc." Please send me further information about this kit-set, where it can be purchased, the cost, and anything else you may be able to tell me that was not covered in the article.

RALPH R. LARSEN, Director,
Visual Education, Liberty
Mutual Insurance Co.

* * *

CLIFTON, N. J.

Editor, TEXTILE WORLD:

Your interesting article in the February issue on "First Aid" contains no reference as to where a "Slidefilm Kit Set," as described, could be purchased.

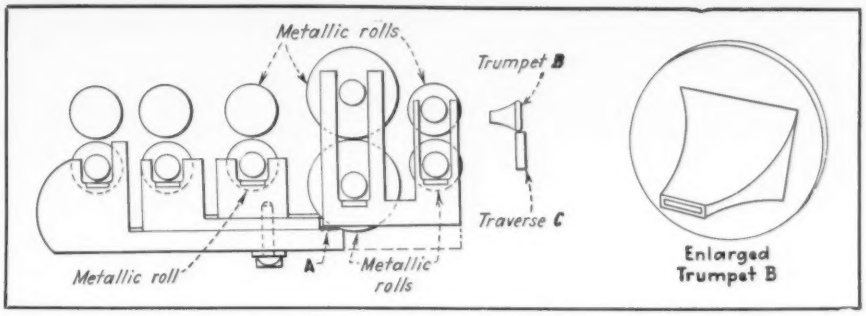
I would greatly appreciate it, if you would please furnish me with this information and also the price at which this complete set is available.

C. HIELLE

TEXTILE EQUIPMENT NEWS

Cotton Roving Frame of All-Welded Design

Designs for an all-welded cotton roving frame were submitted by William Shaw, 420 Harris Ave., Providence, R. I., to the James F. Lincoln Arc Welding Foundation in its recent $2,000,000 Industrial Progress Award Program for reports of advances and improvements made by the application of arc welding in design, fabrication, construction and maintenance. For his paper, Mr. Shaw, who was formerly superintendent of Anawan Mills, Fall River, Mass., received one of the awards made in this 2½ year welding study, which indicated a possible annual cost saving by arc welding of $1,825,000,000. In his paper, Mr. Shaw states that he himself is in no position to build a frame of the type he suggests, but believes that there is an opportunity for the regular manufacturers of roving frames to construct an all-welded frame. Such a frame in his opinion would be stronger, more rigid, and lighter than conventional frames and would permit production of a better yarn.

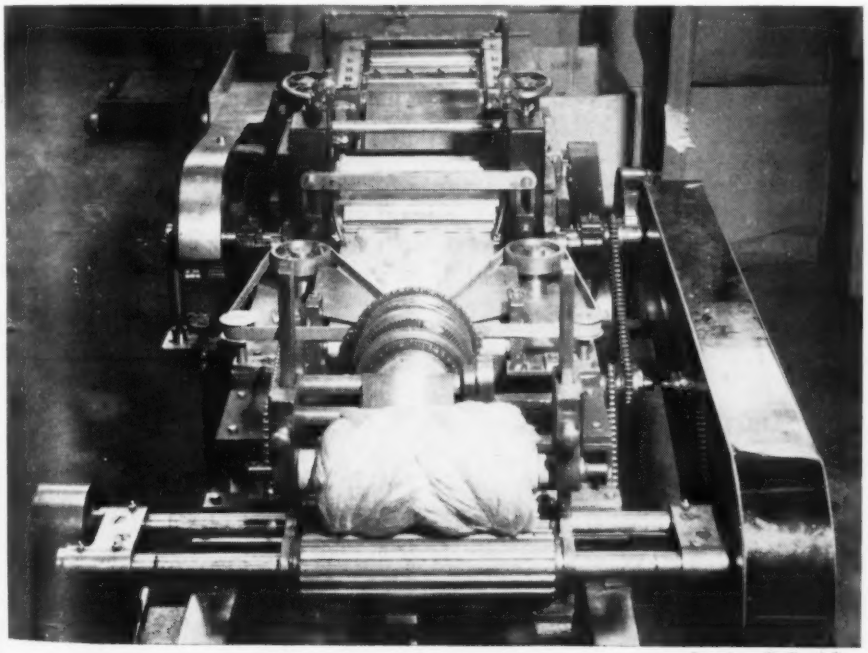


Method of welding long-draft system to roving frames (Shaw).

Among the features of the welded roving frame suggested by Mr. Shaw are a new winding motion constructed by arc welding which eliminates cones and belt; a method for arc welding a long-draft attachment to new or existing drawing frames; a stirrup with welded tongue; substitution of two small bars for the roller beam; a lifter rack with rack and arm welded to the carriage; new arrangements for oiling spindles and of the casing for the carriage and spindle rail; a welded carriage rail; welded driving-shaft bearing; and welded bonnet to cover the large roller gear at the head of the frame.

The accompanying sketch illustrates the method of welding a long-draft system to existing frames. The insert is an enlarged view of the trumpet *B*; the mouth of the trumpet, instead of being a hole is wide; the opening should be $\frac{3}{32}$ in. for 50-grain sliver. The back roll is a 1⅛-in. diameter metallic roll, and the second roll is a 2-in. diameter metallic roll; both rolls have 16 flutes on their circumferences for each 1-in. diameter. *C* is a 1¼ in. width bar stock which serves as the traverse to which the trumpet *B* is welded. The dotted lines show where the device can be welded to roving frames now in operation. From the sketch it can be seen that the device can be welded to any of the usual three-line drawing rolls at *A*.

TOW-TO-TOP MACHINE



Courtesy DuPont Co.

ILLUSTRATED ABOVE is a machine installed in plant of C. H. Masland & Sons, Carlisle, Pa., for converting rayon tow into top by the process developed by N. S. Campbell, Greenwich, Conn., and described in our February issue. The operator has inserted several ends of rayon tow into the far end of the machine. They then pass between a pair of helical shears, the upper member of which can just be seen at the top of the machine. The cutter cuts the tow diagonally to convert the continuous filaments into short fibers of a given length, which then feed into a gill box at the center of the machine. The web of cut fibres is seen emerging from the gill box and passing into a "dynamic funnel," assisted by the arrangement of guide belts. The funnel and "controller" put a false twist into the condensed web. The resulting sliver, is wound on the tube in the foreground. Several ends of the sliver are then passed under a fluted roll of a second machine and then into a gill box; this second stage of the tow-to-top operation further blends, drafts, and condenses the sliver, which is then spun into yarn.

Continuous Indigo Dyeing Machines for Woolen Fabrics

Illustrated in Fig. 1 is the continuous indigo dyeing range built by Riggs & Lombard, Lowell, Mass., for dyeing Navy fabrics by the new process employed by Hampshire Woolen Co., Ware, Mass., and described briefly in our January issue. The machine per-

mits marked savings in time, labor, materials, and costs as compared with the indigo dyeing of wool in stock form. The machine was developed by Riggs & Lombard in collaboration with Fulton Rindge, president of Hampshire Woolen; and G. O. Linberg and G. T. Hug, of E. I. duPont deNemours & Co. With the new machine, the cloth is dyed continuously at a rate of about 600 yd. per hr. The dyeings produced meet the Navy specifications for shade and for fastness to crocking, light and sea water. Development of the continuous process and machine was particularly timely, opening up new sources of supply for indigo dyed fabrics, as woolen mills now equipped to manufacture white goods can weave them to Navy specifications and have them dyed on the continuous machine.

In the new process, the fabric after fulling, scouring, and carbonizing is led directly into the first indigo bath, then through squeeze rolls to remove excess dye solution and on to a skying frame for oxidation. After about 5 min. on the sky frame, the cloth goes into a second dye-bath, through a second pair of squeeze rolls, and then is again skyed. After leaving the machine the cloth is given a thorough scouring to remove excess dye.

Mechanically, the machine throughout is modern in design. Use of dancer rolls and hydraulically controlled variable-speed units virtually eliminates tension on the cloth throughout its entire passage through the machine. Control motors and Reeves variable-speed drive for the dyeing machine are shown in Fig. 2, and the control panel in Fig. 3.

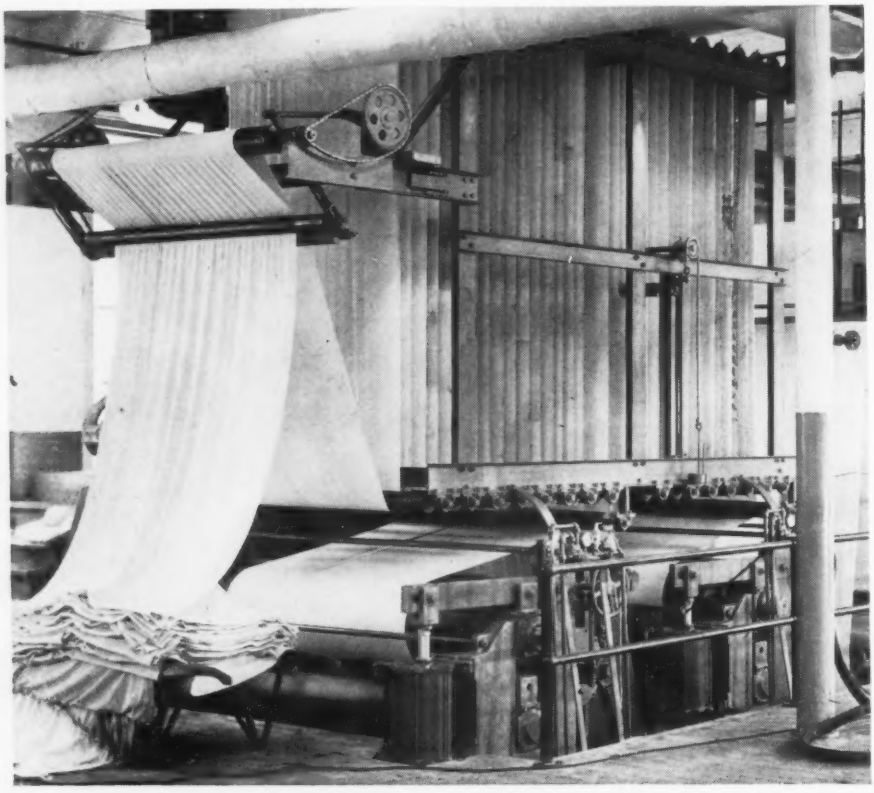


Fig. 1. Continuous indigo dyeing machine (Riggs & Lombard).

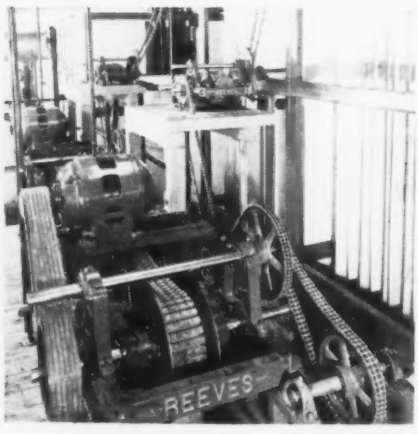


Fig. 2. Control motors and variable-speed drive for dyeing machine and sky frames.

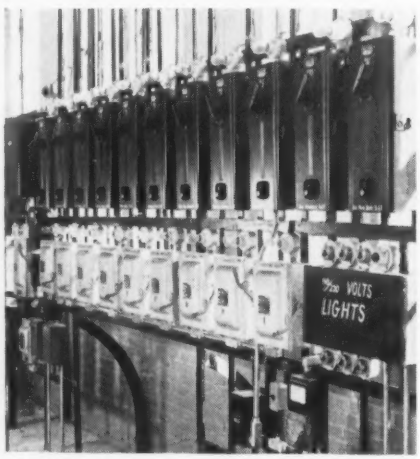


Fig. 3. Control panel.

Ion Exchangers

Development of several types of ion exchangers for use in various process industries has been announced by Permutit Co., 330 West 42nd St., New York. Among suggested applications in the textile industry for ion exchangers are in the purification and recovery of scouring, degumming, dyeing, and finishing solutions; in water purification; and in trade waste disposal. The ion exchangers now available include acid-regenerated cation exchangers and anion exchangers for acid removal. Briefly, ion exchangers are insoluble, granular materials which are usually employed in a percolation type operation. In normal operation, exchangers give up an ion from their structure for one in the solution being treated. They are used until they furnish or remove no more of the desired ion, and then are regenerated for further use.

Blackout Blinds

To permit night operation of industrial plants during blackouts, a fiber blackout blind has been developed by Clopay Corp., Cincinnati, Ohio. This blackout shade is made of flameproofed crepe fiber and may be raised whenever they are not required. Large window areas may be effectively covered by overlapping several rolls of fiber shades.

Paint for Wet Surfaces

For maintaining a porcelain-like finish on wet surfaces and at the same time preventing rust, bacteria, fungus on wet walls and equipment, Steelcote Mfg. Co., St. Louis, Mo., has introduced to the textile industry a product called Damp-Tex enamel. It is stated that Damp-Tex enamel may be used on wood, concrete, brick, or steel, where it will give the same satisfactory service and will adhere to wet surfaces. This eliminates closing down plant operations or taking equipment out of active use in order to dehumidify walls or equipment, preparatory to painting. Damp-Tex is being offered in white and colors. It is stated that it flows easily under the brush, and dries to a high, permanent gloss without danger of cracking, peeling, or checking.

Mill Maintenance Section

Care of Dyeing Equipment

Much of your dyeing and finishing equipment is today irreplaceable, according to International Nickel Co., Inc. The Monel and other vital metals of which it is made must accordingly be protected against unnecessary corrosion and abuse.

The following suggestions should serve as a guide. Prevent accumulation of deposits in wet processing equipment, particularly above the water level. Such deposits may cause accelerated corrosion. Furthermore, being hard to remove, they often necessitate use of scrapers and other tools—a procedure which may easily result in damage to equipment.

Rinse out equipment and utensils—especially after they have been handling corrosive solutions. No metal is completely immune to corrosion and continued contact with residues can and will shorten its life. Hence, equipment and utensils during use and when idle should be kept clean.

How to Keep Your Valves Working

Valve maintenance should be an essential part of the up-keep plan in all textile mills as valves are frequently made of brass and require high priority ratings for replacement. Suggestions for such maintenance as outlined in No. 5 of a series of bulletins entitled, "How to Repair Valves," issued by Crane Co. are covered under six points that should be incorporated in a regular schedule so as to extend the useful life of valves.

1. Keep handwheel nut tight. A rigid handwheel gives finer control for throttling; prevents "chewing" on the square end of the stem.

2. Watch carefully for leaks around the stem. They're a sign that packing needs attention. Don't neglect small leaks; they grow worse and can cause big trouble.

3. Dirt in lines can do much harm to valve seats. Clean new lines thoroughly before putting in service. Always remove dirt and scale when inspecting valves.

4. A few drops of oil here, now and then, especially on steam lines, are needed to keep packing and stem threads lubricated.

5. When valves must be taken apart, be sure the tools used are proper so that the valve will not be damaged in handling. A pipe wrench is always likely to injure the valve . . . a monkey wrench is much safer.

6. Examining seating surfaces carefully is the principal part of a valve inspection. Small damage can usually be repaired without difficulty. If neglected, it may become serious and costly.

Motor Maintenance Record Card

Do you know the condition of your loom motors? General Electric Co., Schenectady, N. Y. has developed a motor record card and made these available to maintenance men. This card is 4 by 6 in. of convenient size for card files and containing spaces on both sides for the recording of essential information on each motor as well as the nature and extent of inspections and repairs. With the use of this card for each motor in the plant, the maintenance engineer has the motors his-

Hp	Syn. Speed	Make	Connection Diagram	Application	Shop or Mill No.	Card No.

Type	Frame	Poles	F. L. Speed	Volts	Form	Temp. Rating	F.L. Amp.	Phase	Cycles

Serial No.
Model No.

Publication No.

BRUSHES
No. per Motor
Cat. No.
Size
Material
Grade

LININGS
Front End, Cat. No.
Pulley End, Cat. No.

PULLEY
Diam.
Face
Belt Width
Bore
Keyway

COILS
(Cat. or Spec. No.)
Stator or Field
Main
Comm.
Comp.
Rotor or Armature
Coils
Bars
No. per Set

Mfr's Order No.
Our Order No.
Date of Order
Cost { Motor / Control

CONTROL EQUIPMENT

Type	Make	Pub. No.

Connection Diagram

User:
Location:

REMARKS:

THIS RECORD CARD FOR MOTOR USERS furnished by General Electric Company, the Builder of TRI-CLAD Motors

11-42 (100M) Filing No. 8030 GES-1526A

SERVICE RECORD

Date	Building	Floor	Driving	Drive	Tested Hp

REPAIRS

Date	Condition	Due to	Repaired by	Cost

GENERAL ELECTRIC SERVICE SHOPS
are located in the following cities:

Atlanta				
Buffalo	Dallas	Kansas City, Mo.	Philadelphia	San Francisco
Charleston, W.Va.	Detroit	Los Angeles	Pittsburgh	Schenectady
Chicago	Erie	Milwaukee	Pittsfield	Seattle
Cincinnati	Fort Wayne	Minneapolis	St. Louis	West Lynn (River Works)
Cleveland	Houston	New York	Salt Lake City	West Lynn (West Lynn Works)

Motor record card showing detailed items contained on both sizes.

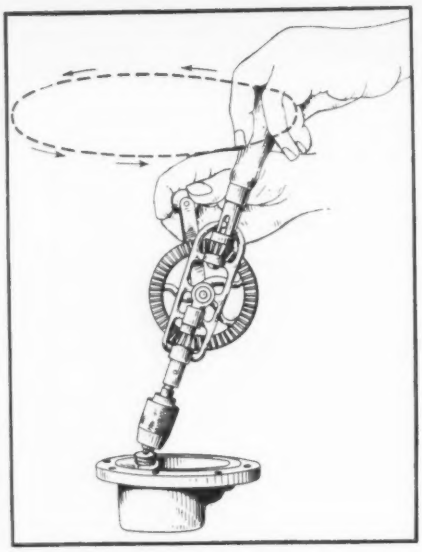
tory right at hand. In this way, excessive amounts of attention or expense will show up and the causes can be determined and corrected.

Improve Steam Trap Performance

Give your steam traps regular, systematic care. Suggestions to engineers and maintenance men are contained in *Armstrong Trap Magazine*, published by Armstrong Machine Works.

At least once a year all steam traps should be taken apart for careful examination. This should be done when steam is turned off for the summer. When taking a trap apart the first thing to do is to check the valves and seats for tightness. If they leak slightly, a tight joint may be restored by lapping the parts together.

Valves and seats can be lapped with a breast drill as shown. Use a fine valve lapping compound and do not press valve against seat—the weight of the breast drill alone is sufficient. After lapping, be sure to remove all traces of the lapping compound.



Method of lapping seats of steam traps.

New Dyes and Chemicals

Water-Repellent and Mildewproofing Compounds

Two new compounds for rendering military and civilian fabrics water-repellent and mildewproof have been introduced recently to the textile industry by Atlantic Stainpruf Co., 258 Main St., Chatham, N. J. These compounds, known as Stainpruf Regular and Stainpruf DC, are said to meet the requirements of Specification P.Q.D. No. 115B for water-repellency and Tentative Specification T-1452 for mildew prevention. Stainproof Regular has a wax base and contains aluminum acetate and a mildew inhibitor. It is applied from an aqueous solution in concentrations ranging from 1½ to 3%, depending on the type of fabric being treated and the speed of the run. The compound is highly stable and is non-toxic under the conditions of intended use. Stainpruf DC is applied from a solvent bath to produce similar results.

Thickener for Pigment Printing and Dyeing

For use in pigment printing in water solution, Stein, Hall & Co., 205 Madison Ave., New York, has developed Sho-Pal, a dry product which acts both as a thickener and binder. In lower concentrations it is employed as a padding liquor for pigment dyeing. The fact that Sho-Pal is used with water eliminates the fire hazard and toxicity of solvents, and also avoids the danger of damaging rubber blankets. It is stated that water-dispersable pigments of any type may be used with Sho-Pal. Any other types of color can be used in the same patterns, because the paste is made up with water. Homogenizing equipment is unnecessary and no strategic materials are involved. Curing is eliminated. Thorough drying is the only requirement to obtain fastness to washing and dry-cleaning.

Preservative for Cotton Rope

A toxic preservative for cotton rope, has been announced by I. F. Laucks, Inc., 911 Western, Seattle, Wash. The newly developed preservative is designed to toughen and stiffen cotton rope, giving it wear resistance and firmness, and reducing unwinding of the strands. The compound is a clear liquid toxic in which the rope is dipped long enough for complete penetration, then dried. Cotton rope which has been treated with the preservative and placed on fishing vessels is said to show no signs of deterioration after six months of hard use.

Emulsion Stabilizer and Penetrating Agent

A concentrated stabilizing agent for oil-in-water emulsions used in the textile industry has been developed by the American Cholesterol Products, Inc., Milltown, N. J. Known as Amerchol S, the new agent is employed in low concentrations to stabilize emulsions and as a penetrating agent in printing and dyeing operations. Amerchol S is a pale, straw-colored, odorless, semi-solid, non-volatile oil which will not thicken or dry out. It is completely soluble in animal, vegetable, and mineral oils, and is readily dispersed in soapy water. The activity of Amerchol S is due to its high content of cholesterol and other free sterols. The sterols have long been recognized as important surface-active materials, but only recently have been made available for industrial use. In addition to stabilizing the oil-in-water emulsions in which it is used, Amerchol S is said to facilitate the penetration of lubricants into textile fibers, thus assuring a rapid, uniform spread of the oil, and allowing its removal completely and easily.

The compound is free of acids, alkalis, esters, soaps, amines, glycols, and resins. It is completely unsaponifiable and will not undergo polymerization. It is unaffected by acids, alkalis, electrolytes, and oxidizing agents, and does not develop rancidity, color, or odor on standing.

Oils for Soaking Rayon Hosiery Yarns

For soaking and sizing rayon hosiery yarns, E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia, has developed two new products which are sold under the trade name, Houghto-Knit. Houghto-Knit No. 2 is a solvent-soluble, waxy product which is used for either soaking or coning rayon yarn. The product is easy of application in either process, and the finished boil-off of the yarn can be accurately controlled by adjusting the strength and temperature of the solution as desired. Houghto-Knit W.S. is a white soluble paste which emulsifies readily in hot water. The product is used for water soaking of rayon yarns. The boil-off of the yarn in this process can be accurately controlled by adjusting the strength of the solution to conform to the results desired.

New Publications

Manual of Dyeing

DYEING WITH COAL TAR DYESTUFFS; G. M. Whittaker and C. C. Wilcock, 4th Edition; 1942, D. Van Nostrand Co., 250 Fourth Ave., New York. $5.

The first edition of Whittaker's "Dyeing With Coal Tar Dyestuffs," published in 1918, filled a gap in the literature on textile technology. To keep pace with the advances in the dyeing industry, the book was revised in 1926, 1938, and again last year. In the latest edition, three new sections have been added and all other sections have been brought up-to-date. The new sections deal with the structure and identification of textile fibers, preparation of textiles for dyeing, and principles of dyeing machinery. As a text book for students of dyeing and a reference book for experienced dyers, this new edition is indispensable.

For Chemists and Colorists

YEAR BOOK of the American Association of Textile Chemists & Colorists, 1942; Howes Publishing Co., 440 Fourth Ave., New York. $3.50.

Each year this well-known year book grows larger and more valuable as a reference volume. Included in it are committee reports, test methods adopted by the association, and list of American-made dyes. Also is a section in which several hundred textile chemical specialties are listed. Addition to this section of a listing of the specialties grouped according to their chemical constitution would make it more convenient.

Test Methods and Standards

A.S.T.M. STANDARDS ON TEXTILE MATERIALS, 1942; American Society for Testing Materials, 260 S. Broad St., Philadelphia. $2.25.

The annual issue prepared by Committee D-13 on Textile Materials gives in their latest form 73 standards on textile materials; this represents an addition of 5 new standards over last year. A 15-page section is included on photomicrographs of common textile fibers, information on basic properties, yarn number conversion table, table for relative humidity, and glossary of terms relating to textile materials which includes a discussion with illustrations of defects in woven fabrics, and definitions. This latest compilation gives a list of papers on textiles presented before the Society or at meetings of Committee D-13. Abstracts of three recent papers are contained covering the engineering use of statistical techniques in testing, application of the statistical method for determining the number of tests required for obtaining the strength and elongation of rayon yarn, and an example of the use of statistics in a study of chemical test methods.

Colloids and Colloidal Chemistry

ADVANCES IN COLLOID SCIENCE—VOLUME I; Interscience Publishers, Inc., 215 Fourth Ave., New York. $5.50.

Research on textile fabrics and on textile processing is in large measure a study of colloids and colloidal chemistry. Accordingly, textile research workers must keep posted on the latest developments in colloidal science. To supply the need for such information, a series of volumes has been planned in which recent discoveries or advances in that science, either experimental or theoretical, will be presented in a more comprehensive and unified fashion than is possible in technical periodicals. The contributors to each volume will be men who have been closely identified with the development under discussion, and the series will be edited by Elmer O. Kraemer in collaboration with Floyd E. Bartell and S. S. Kistler. Volume I in the series made its appearance some months ago, but has not previously been reviewed in these columns. Among the subjects of particular interest to textile research workers treated in it are the following: (1) permeability method for determining specific surface of fibers and powders; (2) solubilization and other factors in detergent action; (3) recent developments in starch chemistry; (4) study of colloids with the electron microscope; and (5) anomalies in surface tension of solutions.

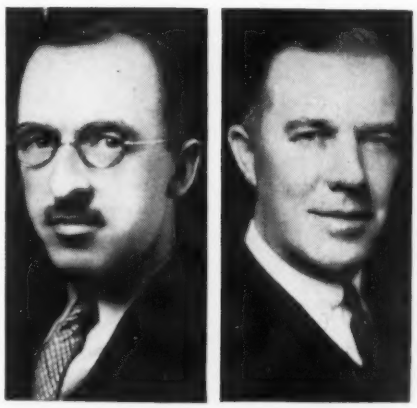
News of Suppliers

Atwood Machine Co., Stonington, Conn., has elected W. McL. Fraser and H. M. Bailey, Jr., as vice-presidents of the company and L. D. Fairbrother, Jr., as assistant secretary. All three have been made members of the board of directors. Mr. Fraser continues in charge of Atwood engineering and production, and Mr. Bailey in charge of sales.

Steel Heddle Mfg. Co., Philadelphia, Pa., has established special "War-Emergency Factory Reconditioning Departments" in each of its plants for the reconditioning of reeds. These departments are separate from the regular manufacturing divisions, but are manned by some of the most experienced reed artisans in the respective plants. Such divisions have been set up in the Philadelphia, Pa.; Greenville, S. C.; Atlanta, Ga., and Montreal, Canada, plants.

Warwick Chemical Co., West Warwick, R. I., has appointed S. A. Moffitt technician and sales representative.

American Yarn & Processing Co., Mount Holly, N. C., has changed its sales representation for the eastern territory. The company has opened its own sales offices in Philadelphia, at



W. McL. FRASER (left) in charge of Atwood Machine Co. engineering and production, and H. M. BAILEY, Jr., in charge of sales, who have been elected vice-presidents of the company.

3701 N. Broad Street, under the direction of Wm. S. Montgomery. In New York, the company's offices are in the Empire State Building, under the direction of Roland Swallow. Present officers of the company are: Rush S. Dickson, president; Wm. H. Suttenfield, vice-president and treasurer; I. C. Lowe, vice-president; Eugene F. Red-

"E" AWARD GOES TO FIDELITY MACHINE CO.

PRESENTATION of Army-Navy "E" Award to the Fidelity Machine Co., Philadelphia, Pa.—Among those who were present were (left to right) Major Robert Allen, U.S.A., Victor Hendrickson, Walter Larkin, G. I. Davenport, Victoria Capasso, Herbert W. Anderson, president and general manager of the company; Marie Docterman, G. Ellsworth Huggins, chairman of the board, and Lieut. E. G. Carpenter, U.S.N.

ding, assistant vice-president and sales manager; Wm. S. Montgomery, assistant vice-president. Eastern sales representation was formerly by Schoolfield & Co.

Kearny (N. J.) **Mfg. Co.** (formerly Hygrolit, Inc.) has appointed George Westwater, its chief engineer since 1934, to be vice-president, succeeding W. R. Slimback, who has joined the armed forces.

Mixing Equipment Co., Rochester, N. Y., manufacturer of "Lightnin'" propeller-type mixers, has moved its New York office from 377 Broadway to 136 Liberty Street. Glenn J. Moorhead, formerly Pittsburgh representative for the company, has assumed the position of eastern divisional sales manager, with headquarters at the new location. C. F. Donovan will continue his duties as manager at the Liberty Street address.

Charlotte (N. C.) **Loom Reed Co.** has been incorporated by S. J. Crane, J. L. Dixon and W. A. Mason, all of Charlotte, to engage in the business of manufacturing, buying and selling of textile machines and accessories.

Rhode Island Laboratories, Inc., West Warwick, R. I., a subsidiary of Warwick Chemical Co., has added Horace Shapiro to its research-department staff as chemist in the field of phosphorescent and fluorescent pigments. For the last two years he has been open-hearth metallurgist for the Inland Steel Co.

E. I. duPont de Nemours & Co., Wilmington, Del., has appointed J. Warren Kinsman as assistant general manager of the Organic Chemicals Department to succeed the late Cesare Protto. Dr. J. A. Almquist will succeed Mr. Kinsman as assistant general manager of the Plastics Department. Mr. Kinsman has been with duPont for 28 years.

The Bristol Co., Waterbury, Conn., automatic control and recording instruments, has appointed L. G. Bean as vice-president in charge of engineering and sales. He has been, since 1939, vice-president and general sales manager. Harry E. Beane, who has been field sales manager since 1936, has been named sales manager. E. L. Stilson, lately with the field engineering department, has been made assistant sales manager. These three men joined the Bristol organization in 1920.

L. G. BEAN (left) now vice president in charge of engineering and sales, and H. E. BEANE (right) now sales manager of The Bristol Co.

Scully Steel Products Co., Chicago, and seven other cities, distributors of steel and steel products, a subsidiary of the United States Steel Corp., has had its name changed to **United States Steel Supply Co.** Only the name has been changed—the personnel, warehouse locations, telephone numbers, etc., remain the same.

Laminated Shim Co., Inc., Glenbrook, Conn. — Earl L. Young, vice-president in charge of production for this company has retired after 23 years service with the company.

Booth Quality Card Clothing Co., Philadelphia, recently celebrated its fiftieth birthday. The occasion was also used to dedicate a service flag to 25 of the firm's employees now in the service.

Philadelphia Quartz Co., Philadelphia, has appointed LeRoy R. Fischer as assistant sales manager of detergents. He joined the sales staff of the company in 1934.

Morris Speizman, Charlotte, N. C., has recently expanded his repair facilities by the addition of a completely-equipped machine shop and carpenter shop in connection with his supply depot. His machine shop will be largely engaged in the manufacture of precision war products but will be available for necessary repair and maintenance work for the knitting trade. He is carrying in stock an extensive supply of knitting machinery and supplies.

Wickwire Spencer Steel Co., New York, has appointed Wilfred C. Shattuck as wire sales manager. He will be located in the New York office. Previously with the company for 19 years, he returns to it after two years with John A. Roebling's Sons Co.

Joshua Hendy Iron Works, Sunnyvale, Calif., related to the Six Companies, Inc., of which Henry J. Kaiser has become the popular symbol, has recently bought the Crocker-Wheeler Electric Mfg. Co., the Hydril Co. of Torrance, Calif., and the Pomona Pump Co., of Pomona, Calif., together with the latter's Westco Pump Division of St. Louis, Mo.

General Electric Co., Atlanta, Ga.—A. W. Baker, for 25 years connected with the industrial department of GE, who has been textile specialist for a number of years, has been recently appointed southeastern transportation

You can count on SONOCO today and tomorrow

War is a passing thing—but business goes on. For most of our customers this is their second or third war . . . They depend on us today, but we are counting on them for tomorrow.

Right now our main business is war business—as suppliers, both direct and indirect . . . But we are thinking about post-war business. . . We are going to be ready for that, too.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

KENNETH A. COATE, who has been appointed western manager of the Lake Department, Calco Chemical Division, American Cyanamid Co. He has been with Calco since 1928.

manager for the company, with headquarters at Atlanta, Ga.

B. F. Goodrich Co., Akron, Ohio, reports that Chester F. Conner, manager of distributor sales of Goodrich's Industrial Products Division, has been appointed to the staff of advisors on mechanical rubber goods in the Office of Rubber Director, WPB. B. F. Goodrich Co. has appointed John M. Davies, as director of physical research.

International Business Machines Corp., New York, has promoted John C. McPherson to the position of director of engineering. For the last two years he has served as manager of the company's future - demands department. C. A. Kirk, vice-president in charge of manufacturing, is now a director.

Carrier Corp., Syracuse, N. Y., has reported for the fiscal year, ended Oct. 31, 1942, net income of $541,564. As of Oct. 31, Carrier's backlog of unfilled orders totaled $24,717,302, made up almost entirely of orders from the Army, Navy, Maritime Commission. Lease-Lend and essential war industries. The comparable figure on Oct. 31, 1941 was $10,211,984. Of the business written during fiscal 1942, 95% was for war purposes.

MacFarland, Aveyard & Co., Chicago, have opened a branch office in New York in the RCA Building, Rockefeller Center.

Austin Co., Cleveland, Ohio, has appointed W. G. Paton, of Cleveland, and W. R. Engstrom, of Seattle, as vice-president's. Mr. Paton joined the Austin organization in 1919, and is assistant to the general manager. He will also assume the posts of assistant secretary and assistant treasurer. Mr. Engstrom has lately been district manager in the Seattle territory.

National Association of Fan Manufacturers has elected John M. Frank, president of the Ilg Electric Ventilating Co., Chicago, as its president.

L. J. Wing Mfg. Co., New York, has elected Harry S. Wheller as president and general manager. Mr. Wheller, who has been vice-president since 1917 and with the company for over 35 years, succeeds the late Alfred E. Seelig. Walter W. Wilson has been elected vice-president and treasurer.

NEW FACILITIES AT CHARLOTTE FOR E. H. JACOBS MFG. CO.

E. H. JACOBS MFG. CO. has recently completed its new plant at Charlotte, N. C. Modern, streamlined, and planned with an eye on efficient straight-line continuous production, the plant is designed to provide for present and future requirements. The offices (shown above) are comfortable and commodious; storage, manufacturing and finishing departments are ample and well arranged. W. Irving Bullard, president of the corporation, is in direct charge. Assisting him in the office is L. B. Pitts.

FRANK J. BENNETT, who has been appointed to head Devoe & Raynolds Co.'s textile division, which covers maintenance sales to mills. Mr. Bennett has been with Cheney Bros. for 16 years. He will also assist Milton Lightcap, director of maintenance sales, in the formation of a national accounts division, to take care of painting requirements of concerns which operate units in various sections of the country.

Manhattan Rubber Enters Golden Anniversary Year

During 1943, with the plant's manufacturing facilities geared to produce war materials at full capacity, the management and personnel of the Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., will mark the fiftieth anniversary of its founding as the Manhattan Rubber Mfg. Co. The original company was incorporated on Oct. 28, 1893. The original building, 50x150 ft., was erected by John W. Ferguson, Paterson contractor, who was also an early stockholder. On Jan. 1, 1894, manufacturing operation started with a crew of 40 men.

The incorporators were Frank Cazenove Jones, father of Mr. Jones, president of the Okonite Co.; W. W. Dashiell, last surviving founder; Arthur Farragut Townsend; Peter Reid, of Reid & Barry; Samuel J. Watson, of the Watson Machine Co., Paterson; and George Woffenden. Mr. Jones, the first president, served till his retirement in 1903, and was succeeded by the late Colonel Townsend, who served as president for 26 years up to the merger in 1929 which formed Raybestos-Manhattan, Inc. From 1929 until his death in 1940 Colonel Townsend was chairman of the board of Raybestos-Manhattan, Inc., and general manager of the Manhattan Division.

Manhattan's Passaic plant now employs nearly 4,000 persons and covers more than a million square feet of floor space. It is now entirely engaged in war work. To Feb. 22, 1,003 of its men have entered the armed forces.

(Additional "Suppliers News" items will be found on page 148)

now you can get

FRENCH-DRAWING RUB APRONS THAT GIVE ACCURATE yarn count

FINISHAM

- - - an "all American" product

Until 1939 rub aprons (sometimes called rubbing leathers) used on French-drawing or porcupine frames in the United States, were tanned and manufactured on the continent. World War II shut off these sources of supply and inquiries began to be made among domestic tanners for an alternate to this highly specialized type of product.

We answered the challenge by developing our FINISHAM apron. It is not a copy of something else, but in a class by itself. Within one month's time of the introduction of Finisham to the market, this apron won recognition. It is considered superior to any other type of apron used on a French drawing frame, because:

—FINISHAM produces highest-quality yarn.
—FINISHAM runs straight on rolls.
—FINISHAM maintains constant rub surface.
—FINISHAM does not stretch.

We hope to be able to keep our production even with the demand that the mills may keep supplied for the duration. *When peaceful skies once again cover this earth, we shall have done our part, however small, in helping United States mills to produce the high quality yarns for which they have long been famous.*

Our latest catalog sent upon request.

FINE FINISHING WITH FINISHAM

BARNES PRODUCTS

Aprons for Combing, Preparing, Finishing, and Drawing
FRENCH AND BRADFORD SYSTEMS
Chrome—Brown—Special Tan

Plain and Hair-On Loom Strapping

BELTING

First-Quality Center Stock Prestretched and Manufactured for Each Drive Condition Available in All Tannages

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE Textile Leather HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

"Which Way to Throw Rayon?" is the title of an interesting article contained in *The Houghton Line* for January, published by E. F. Houghton & Co. This article discusses various methods which are at present being applied in different plants for the treatment of rayon yarn such as solvent soaking, water soaking, oil soaking and emulsion sizing. Solvent coning, water coning and oil coning are also discussed.

Intra-plant transportation is featured in the January issue of the *Swirling Column*, published by the American Mono-Rail Co. An article commenting upon the morale poster from Britain that was circulated around the world is of interest.

Good housekeeping is discussed in the January issue of *The Traveler*, published by Victor Ring Traveler Co. This article deals with the conservation of spinning equipment in mills through an organized system of housekeeping. A proper scouring schedule necessary for maintaining efficiency of spinning frames is also contained and covers practically all various counts of yarns. Another article entitled "Textiles Serve on Every Front" points out the importance of textiles in the present war.

Lowell, as an early textile center, is discussed in the February issue of *The Howard Way*, published by Howard Bros. Mfg. Co. Textile men will undoubtedly be interested in learning about the early wage rates paid workers in this industrial city about the middle of the 19th century.

Life of stainless steel equipment is discussed in great detail in the February issue of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works. Such important items as cleaning and maintenance for increasing service life, construction features affecting service life and the effect of chemicals and chemical action on service life are discussed in practical terms in this article.

Sewing machine maintenance, the second in a series of articles, appears in the February issue of *The Needle's Eye*, published by Union Special Machine Co. This article covers the matter of using proper fittings to cover particular operations especially those that are employed in sewing heavy weight fabrics required by the Army and also much material concerning the correct operating speeds. Other articles in this issue are "Fighting Bombs with Sand" and others concerning the solving of war production problems that are found in the manufacture of army garments, tents and tank coverings.

An expanding mandrel recently developed to permit easy, rapid removal of endless yarn packages from the spindle without touching the yarn is described in the February issue of *Atwood Twists*, published by the Atwood Machine Co. Textile men will also be interested in much of the information contained in this issue concerning the maintenance of Atwood machines covering subjects such as motor temperature, vibration, lubrication, etc.

Fiberglas, its manufacture and the research progress made in developing this fiber are discussed in the January issue of *Wheelco Comments*, published by Wheelco Instrument Co. The article points out the importance of precise control of glass temperature. Many existing uses of Fiberglas are pointed out, such as wire insulation, its use in electric motors and the part that it is playing to meet aviation basic requirements.

Laminated shuttles, a development of wartime to meet the shortage of dogwood, commonly used in the manufacture of shuttles, is described in the January issue of *Cotton Chats*, published by Draper Corp. The December issue of *Cotton Chats* illustrates the part that Draper plays in the present emergency program.

Packaging with steel bands is discussed in *Acme Process News*, Issue No. 10, published by Acme Steel Co. Textile mill men will be interested in a description of the baling of wool into compressed bales weighing 525 lb. in an effort to reduce freight charges.

Maintenance men in textile plants will be interested in obtaining a copy of a booklet entitled "Welding and Brazing ALCOA Aluminum," recently released by Aluminum Co. of America. This 100-page booklet covers in great detail the welding of aluminum by both gas and the arc method. Brazing by the furnace, torch and dip methods are each thoroughly described. This well-illustrated booklet contains many tables and data that will be of great assistance to any mill maintenance man in keeping his equipment in operation.

Brushes designed for cleaning about textile machines are illustrated and described in Catalog No. 10, offered by Atlanta Brush Co. Brushes for combers, looms, spinning frames, roving frames and so forth are covered. A complete line of brushes such as those used on and about the cards are also offered.

Compressors and pumps of the sliding vane type are illustrated and described in bulletin B-6211, offered by Allis-Chalmers Mfg. Co. These pumps are built according to war-time standards and afford a valuable conservation of critical war materials. Operating speeds range from 1,200 to 1,800 r.p.m. Curves showing relationship between pressure, temperature and volume are contained in this bulletin.

Speed reducers are discussed in a 24-page booklet prepared by Winfield H. Smith, Inc. Among various installations shown in this booklet is one illustrating a drive installation on dryers used in the finishing department of woolen mills. A speed reduction of 21 to 1 is used in this instance.

Lubrication of ball and roller bearings is discussed in a leaflet issued by Fiske Bros. Refining Co. Lubrication of plain bearings, chain drives and gears of the inclosed and the exposed types are also covered.

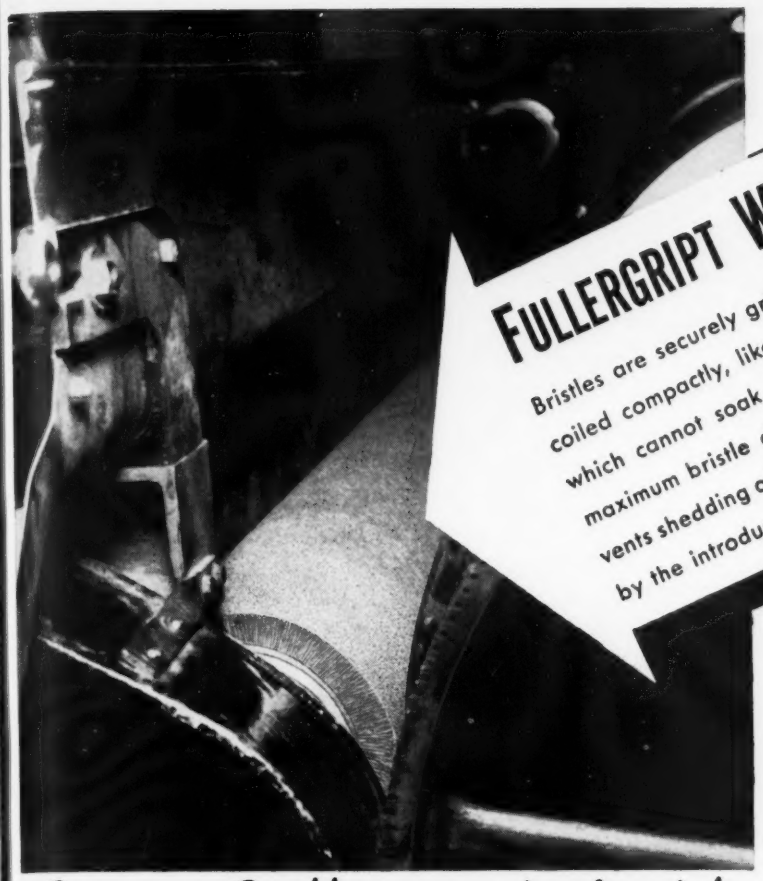
Leather belting for short center drives and also for overhead shafting to withstand two- and three-shift operation is mentioned in a leaflet offered by J. E. Rhoads & Sons.

Mill executives interested in the development of one of the large paint companies will be interested in the pictorial brochure offered by Devoe & Raynolds Co., Inc.

Finishers will be interested in a new technical bulletin issued by Electrochemicals Department of E. I. du Pont de Nemours & Co., entitled "Increasing Water Resistance of Polyvinyl Alcohol Coatings." These coatings form a tough plastic which is gas- and vapor-proof and resistant to grease and organic solvents. Methods are described in this bulletin for reducing the water sensitivity of the polyvinyl alcohol coatings after they have been deposited from water solution.

Health and morale problems are discussed in a report recently issued by Policyholders Service Bureau of the Metropoltan Life Insurance Co., entitled "Washroom and Locker Room Facilities." The sudden expansion of personnel and the increasing number of women employed in textile mills have created acute problems in many plants. This report discusses floor plans, locker rooms and lavatories, and the minimum space requirements as laid down by the sanitary codes.

"Patents at Work," is the title of a booklet issued by Alien Property Custodian of the United States. This booklet describes statement of policy of the custodian concerning foreign patents which are available to concerns in the United States. Also included is an index of patents which should prove of interest to many textile mills. Patents covering bleaching and dyeing, cloth finishing equipment, fiber preparation, spinning, twisting and twining and weaving textiles are available for use by those textile mills which make application for them.



FULLERGRIPT WORSTED-CARD BRUSHES

Bristles are securely gript in rust resisting metal. This strip is then coiled compactly, like fillet card clothing, around a metal core, which cannot soak up oil, crack or split. This construction gives maximum bristle density, longest life and lowest cost; it also prevents shedding of bristles and the consequent ruining of good stock by the introduction of highly objectionable "foreign matter."

Again Fullergript Textile Brushes do a Better Job at Lower cost!

Here is a new success story — to add to the ones on Fullergript cotton-card brushes, Fullergript thread-dresser brushes, Fullergript dabbing brushes and other Fullergript textile brushes.

FULLERGRIPT WORSTED-CARD BRUSHES

contribute to this impressive demonstration. Its tightly packed bristles push the wool — all the wool — down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal.

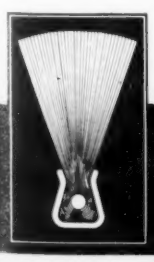
Fullergript brushes are proving helpful in three ways on worsted cards — as feed-roll brushes to start the wool properly in the teeth of the first lickerin, as Morel brushes to disentangle the burrs from the wool, and as Morel transfer brushes to carry the wool to the Morel roll and disentangle the burrs at the same time.

In all these applications the great density of the Fullergript bristles insures that the wool will be pushed into the clothing — not back into the brush! This means the brushes will not clog up rapidly, lose their efficiency and require cleaning — always a difficult, time-consuming job.

YES, its a new success story. Do you want to hear the others — on cotton-card brushes, for example? If so, write us and we'll gladly relate them to you.

Do You Want To Remove Burrs?

Look at the quantities pouring out of this worsted-card in a prominent New England combing plant.



FULLERGRIPT — *better work at lower cost*

The FULLER BRUSH Company

INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - - - HARTFORD, CONN.

OUR VISUALIZATION **of the post-war woman of fashion is only a guess . . . no prediction at all could be made of the fabrics she will wear. But *this* can be predicted: whatever fibres come to the fore in our post-war world, Universal Precision Winders will be selected when those fibres are precise-wound onto cones.**

The No. 50 Precision Winder is extremely flexible — the opportunity it provides for accurate and variable control of tension and pressure has enabled our engineers to meet the challenge of each new yarn's winding problems. The quality of many such yarns now serving wartime needs is preserved by winding onto Universal Cones — similar assurance of quality protection can be made for the synthetic yarns which will make the fashionable fabrics of tomorrow.

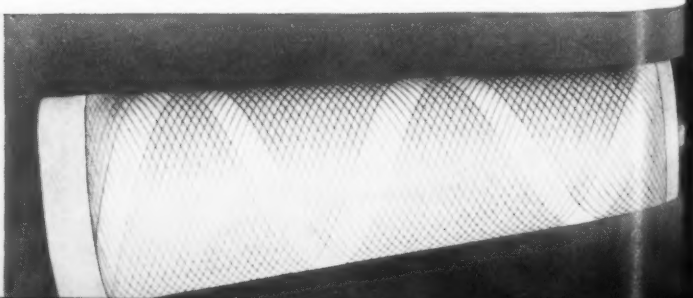
wound on the 50 . . . for fighting or fashion

Universal Winding Company

LEESONA REG. U.S. PAT. OFF.

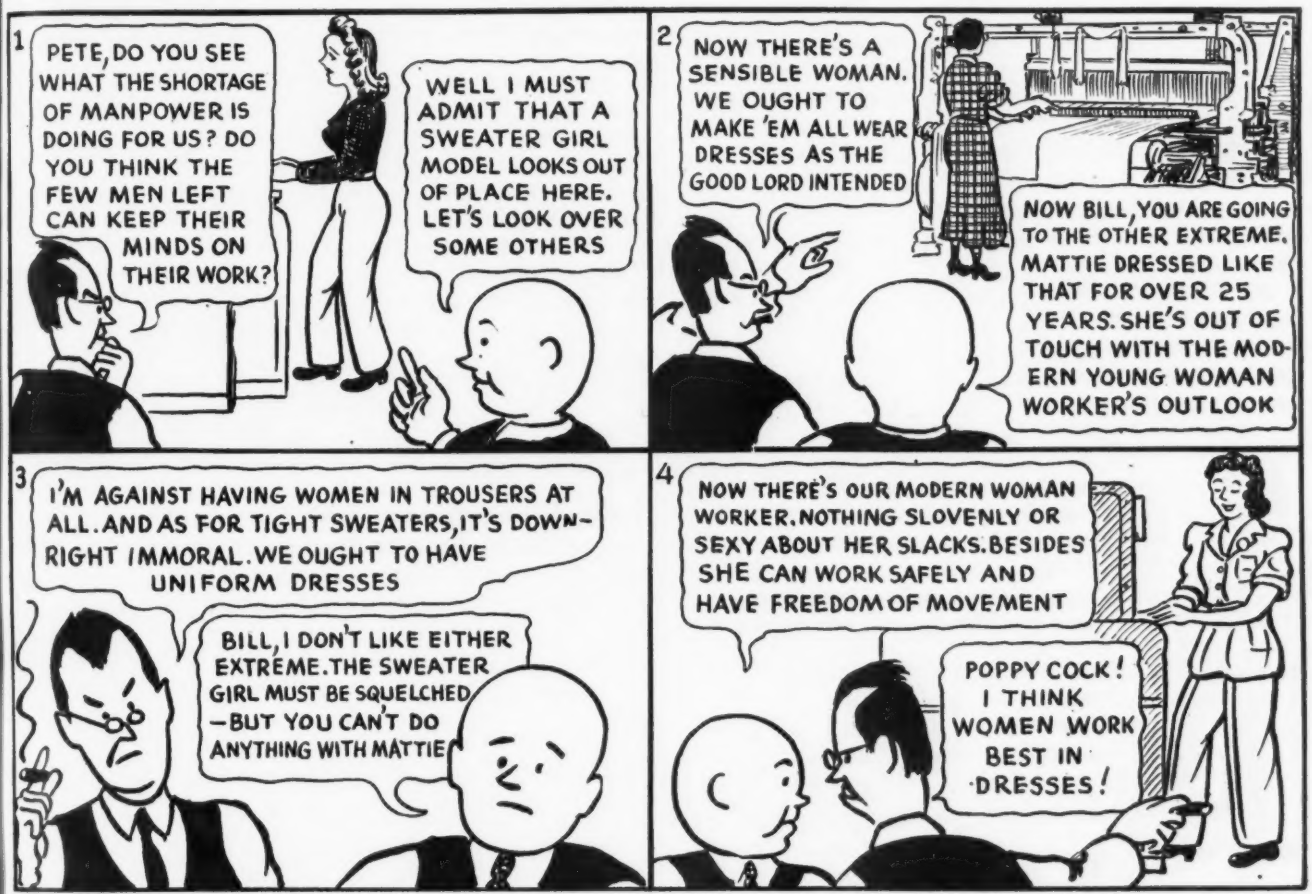
PROVIDENCE
BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

MORE THAN 90% OF ALL SYNTHETIC YARN IS PRECISE-WOUND ON THE FLEXIBLE 50



THE OVERSEERS' CORNER

PETE AND BILL — Suitable Dress for Women Workers


1
PETE, DO YOU SEE WHAT THE SHORTAGE OF MANPOWER IS DOING FOR US? DO YOU THINK THE FEW MEN LEFT CAN KEEP THEIR MINDS ON THEIR WORK?
WELL I MUST ADMIT THAT A SWEATER GIRL MODEL LOOKS OUT OF PLACE HERE. LET'S LOOK OVER SOME OTHERS
2
NOW THERE'S A SENSIBLE WOMAN. WE OUGHT TO MAKE 'EM ALL WEAR DRESSES AS THE GOOD LORD INTENDED
NOW BILL, YOU ARE GOING TO THE OTHER EXTREME. MATTIE DRESSED LIKE THAT FOR OVER 25 YEARS. SHE'S OUT OF TOUCH WITH THE MODERN YOUNG WOMAN WORKER'S OUTLOOK
3
I'M AGAINST HAVING WOMEN IN TROUSERS AT ALL. AND AS FOR TIGHT SWEATERS, IT'S DOWNRIGHT IMMORAL. WE OUGHT TO HAVE UNIFORM DRESSES
BILL, I DON'T LIKE EITHER EXTREME. THE SWEATER GIRL MUST BE SQUELCHED —BUT YOU CAN'T DO ANYTHING WITH MATTIE
4
NOW THERE'S OUR MODERN WOMAN WORKER. NOTHING SLOVENLY OR SEXY ABOUT HER SLACKS. BESIDES SHE CAN WORK SAFELY AND HAVE FREEDOM OF MOVEMENT
POPPY COCK! I THINK WOMEN WORK BEST IN DRESSES!

Should any specifications be set for the dress of women workers while on the job?

Letters from Readers

Suggestion Box Dangers

"Suggestion Box in the Mill"
(Pete and Bill, Jan., 1943)

Editor, Overseers' Corner:

Suggestion Boxes for employees definitely do not stimulate good feeling in the mill. We have had this practice in operation for a number of years and while I would not necessarily recommend its discontinuance, I have seen so many instances of suggestions offered, that obviously should have been a part of the suggestor's responsibility in the performance of a good job, which produced a condition of unhappiness because we indicated this opinion to them. On the other hand, it is rather interesting to know that in war industries there have been some very definite benefits derived from this practice. In my opinion, it is a highly controversial question. B. W. R.

Don't Be Snobbish

"Suggestion Box in the Mill"
(Pete and Bill, Jan., 1943)

Editor, Overseers' Corner:

I firmly believe that suggestion boxes for employees stimulate good feeling in the mill. The suggestion box is the best line of communication between management and the workers. The suggestion box gives notice to the workers that management accepts them as thinking individuals not merely as robots set up to do a task.

Workers need emotional outlets. There's nothing better than the suggestion box. Some men are extremely shy and may have locked in their minds a capital idea which they are too shy to talk about. Others are sullen and silent. Some are belligerent in conver-

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CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing material on these pages or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

sation and their approach is much toned down when they write. The suggestion box gives everyone an opportunity to have his say.

It's quite true that most of the suggestions will have no value. The box will be filled with complaints and belly-aching, but you can't have a suggestion box for long before you'll get some good suggestions and hear of some just complaints. S. N. R. (*Pa.*)

Bonus Is Best Xmas Gift

"Xmas Presents from the Workers"
(Pete and Bill, Dec., 1942)

Editor, Overseers' Corner:

No, I don't think I like for my boss to give me a Christmas present. I want my boss to think I am for him at all times in our line of work, and that I am interested in getting my work out. If he thinks I am worth more money he can give it to me in my pay envelope at week-ends. Christmas presents are lovely to get, but it causes a lot of trouble with the other half. I look forward to my bonus at Christmas as I think it belongs to you after working hard all year through.

I enjoy reading your "Overseers' Corner," and whenever I find the time I will drop you a line on what I feel about Pete and Bill. I am very happy to have TEXTILE WORLD in my home.

MRS. ELIZABETH TOOLEY
(*Cohoes, N. Y.*)

Overseers' Practical Helps

Finding Misplaced Colored Ends

Hold the sample up to the light about eye level. Misplaced colored warp ends appear as heavy streaks. Mark the streak with a small hole by pressing the point of a picker or pencil through it. Examine the sample with a pick glass if the wrong colored end is difficult to find.

Place a strip of paper on top of the sample so that it covers one selvage and mark the place of the misplaced end on the paper with a pencil. Take this paper to the loom, hold it on the cloth, and the mark on the paper will show at a glance where the misplaced colored end is in the warp. S.R.E. (*Pa.*)

Care of Tools

Fixers are having difficulty in securing tools, whether furnished by the company or themselves. Tools carry a high priority rating—often higher than ratings in textile mills and consequently many fixers are handicapped by having to borrow tools or get by with those they have. This, naturally, has caused some slowdowns and friction among the fixers. Tools loaned are often broken, lost, or in some instances not returned.

To relieve this condition it is desirable for the overseer to be responsible for tools furnished by the company. Regular checks on standard tool sets by fixer and second-hand will help fixers keep tool kits in good shape. Once every week would not be too often to make such a check. Tools missing or broken should be reordered immediately.

Another suggestion is to build a special tool kit of light wood, or plywood and mounted on casters, as illustrated. Provide swinging doors that can be locked and on the slanting panel put hooks for holding the various tools. Paint with a black enamel a silhouette of each tool on the panel back of the tool so that the tool may be replaced readily. A tag, with the tool number, tacked just below the tool position will also help.

These rolling tool kits can be supplied by "pooling" the necessary tools by fixers and then having other tools removed from the room or mill. Tools may be checked by the several fixers using the kit and signed for to fix responsibility. Several like tools may be provided for each kit where they are in constant use.

This kit may be rolled about the room

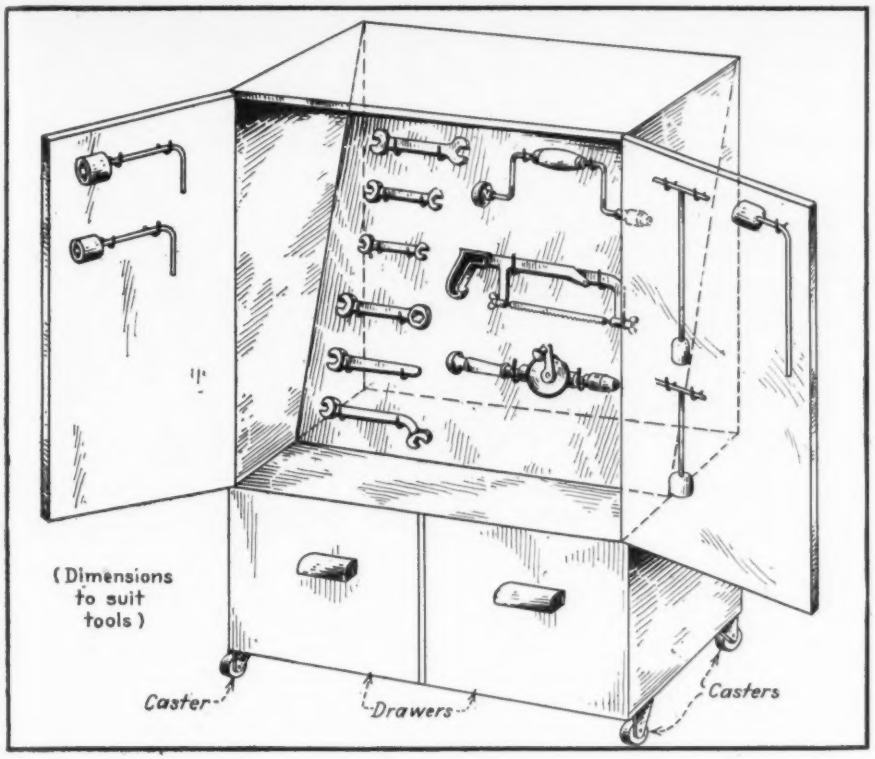
Memories of Old Man Carelessness—By Martha Pittenger

NO. 3—HORSEPLAY

As my feeble hands fumble the pages of my record book of accidents in textile plants, I see "Horseplay" on many pages. Horseplay is one thing I can always catch employees with, and it is easy to get victims. You see Horseplay is not only *my* game, but it was handed down to me by Grandfather Stupidity, a grand old man.

Oh, yes, the page I have turned brings back to my memory one day in a Southern textile mill, when I was hanging around close to a certain young fellow. He was feeling good that day and was filled with extra energy, so I knew it was my time to work on him. I tempted him to engage in Horseplay with another fellow. I told him using his hands wasn't rough enough, for him to open his knife and dare the other fellow to come closer, and so he did. Of course neither one of them was mad—just playing and did not mean to hurt each other, but, as my record shows, the second fellow threw up his hand to knock the knife out of the first fellow's hands, and the blade slit open his finger, deeply, and stitches had to be taken. Of course the whole hand became sore, and the fellow had to lose four days from work. Too bad he had such good first aid—without it, I might have kept him from the job for weeks.

I specially liked to get one of my friends in the mill to startle others while they were busy at work, with their mind on what they were doing. He can walk up behind an employee and make a loud noise, or poke him. I love to see them jump, for when they jump, their hands usually get hurt in moving machinery. It tickles me to see them move quick, for they either get hurt themselves, or cause someone close to them to get hurt. The "green" hands are my pets for they always do something foolish. But often I can get even strong-minded people, with adult minds, and make them act childish to their hurt. Add them all up and you have a legion injured from Horseplay.



A tool cabinet may be constructed of plywood and mounted on casters.

to locations convenient to all the users. At the end of each shift all tools are replaced and checked quickly by the second hand and another group of fixers then take them over. In this way the tools are checked each shift, fixers can get tools for the job and tool losses eliminated. T.O.O. (*S.C.*)

Fixers for Hosiery Machines

Men who have had experience as knitters favored over those who have not operated machines

BY K. R. BARKER

"MEN WHO have had some experience as knitters, as a rule, make better fixers than those who have not had such experience." This statement appeared in the November, 1942, issue of TEXTILE WORLD in an article on hosiery machine maintenance. I have been waiting patiently for years to read something like that. After seeing dozens of articles on fixing over a period of years, this is the first time, to my knowledge, anyone has had the gumption to come out flatly with a statement of this kind. Although there may be a lot of controversy over it, I wish to go on record as being in full accord with the author.

With all due respects to the men in the business who have started at frame building and advanced to fixing, no matter how skilled they may become at this work, they still lack the fundamental ground work every knitter must learn. The knitter acquires a "touch" over a period of years that stays with him to good advantage when he is given the opportunity to be a fixer. Men who have never operated a machine never really understand the knitters' problems, and some are prone to look upon all knitters as "dumbells" just because they do not know how to lay down a frame or attach a narrowing machine.

A good fixer must not only be thoroughly acquainted with his own job, but with that of the knitter. If he has never run a machine, how is it possible for him to look at a machine as the knitter would? Moreover, it has been my experience that a man who has never operated a machine does not possess the necessary patience it takes to cope successfully with all the little problems that plague a knitter from day to day. Setting up a machine is one thing, but it is a different story to keep it running to the satisfaction of the knitter. After all, is that not a good fixer's job?

There are many good men building machines who thoroughly understand their job, but there are also some who do not grasp the problems a knitter has once the machine has been accepted by the management. Remember, a good fixer uses his pliers as much as he does his wrenches; this is the forte of the fixer who has first learned to be an excellent knitter. Only "above the average" knitters are promoted to fixing.

MANY OF THE BEST FIXERS have never set up a machine, but could do it if it was necessary. Men who are handy with tools, but who know nothing about knitting can learn to erect machines in a couple of years. But try and make a fixer out of a raw recruit in the same period of time. Good fixing begins with learning to mop up the pan under the machine and then on to operating it. Anybody can learn to level off a machine and stick to standard gages, but there are many occasions when gages have to be dispensed with, as they do not tell what is wrong with a machine. They just tell where the part should be set. It has been my experience that fixers who have first been knitters rarely carry gages around in their pockets. A man who has to revert to gages continually is not the best fixer; it shows a lack of training in the important things it takes to keep machines running efficiently.

Some years ago there was a big boom in installing machines in the South, and these machines were eventually turned over to knitters to fix. Of course, it required time to teach these men and, it cost money at the start, but today these mills have some of the most efficient fixers in the business. The mills were evidently looking a long way ahead. One of the best-run mills in the country employs as fixers only men who have operated machines, because the management realized that the first requisite of a fixer is that he understand the problems of the knitter. Such a policy goes a long way in creating harmony between the knitter and the fixer.

Further, it is no more than right that a good knitter should be given a chance to improve himself. More than once I have heard good knitters lament over the fact that there seemed to be no chance for them to do anything but walk up and down an aisle for the rest of their lives. It is surprising indeed the amount of energy one of these boys will expend if given the chance. Usually he will take hold of the job quickly and continually go out of his way to learn or accomplish something around the mill that will force the management to sit up and take notice.

LOOMFIXERS' MANUAL

WOOL SECTION—Chapter XIV (Continued)—Box Motions

By EUGENE P. SCHREMP

OPERATIONS to change a 4x4 box loom to a 4x1 automatic loom: Parts needed for such a conversion are illustrated in Fig. W30. Remove the right hand shuttle box, lifter rod and spring, allowing the lifter tube to remain; then push down the spring and all chain connections to remain in place. Remove the outside box guide and the Hodgman check. Remove the binder release finger and loosen set screws of the release arm, but leave it on the shaft. After removing the parts listed, attach a single cell box which is held in proper position by dowel pins. The binder, box end, box mouthpiece, and outside shaft bearing should likewise be assembled in their proper position and the protector rod finger, binder pressure finger and arm and spring attached. A shuttle check must be fastened to the bottom of the lay end. The magazine can now be put in position and the stand fastened to the breast beam with two capscrews. The color indicator, detector rod, and thread holder should be connected and properly adjusted. If two picker balls are on each double roll arm, remove one ball from each arm.

It is very important that the right picker balls are removed, otherwise the detector cam will be out of time. To check this, have the lay at back center with the detector cam lever at its highest point. It may be necessary to turn the loom over one pick to reach this point. Turn the loom to top center and at this position one of the picker balls will be resting on the picker shoe at the magazine side. Remove the picker ball that is at the other end of the double roll arm, and at the box side remove the picker ball that is resting on the picker shoe. Confusion of picker parts can be eliminated by painting with red paint the parts to be removed.

Lay Motions—Chapter XV

A LAY of the type used on W-2 and W-3, Crompton and Knowles, 4x1 automatic looms, is illustrated in Fig. W31. The steel and wood frame is extended to form a plate or surface at the magazine side. A formic plate is fastened to the lay with screws to form a shelf for the shuttle. This plate is pitched so that the shuttle is thrown slightly downward. When a 48-in. straight edge is used to check the alignment, there should be no more than $\frac{1}{32}$-in. clearance between the race plate and the bottom of the straight edge at the point where the race plate begins. The race plate on the lay should be perfectly level; only the lay ends should pitch slightly. An excessive amount of downward pitch will cause the shuttle to strike the race plate and sometimes break the warp ends.

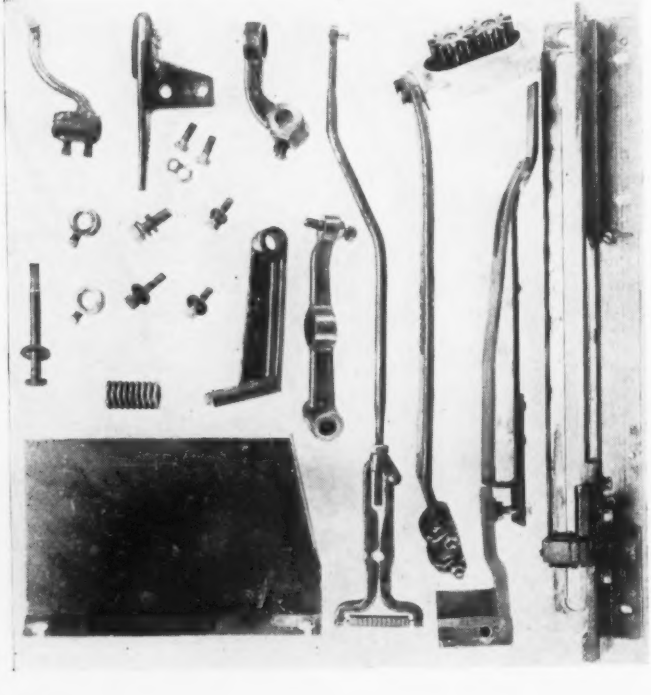
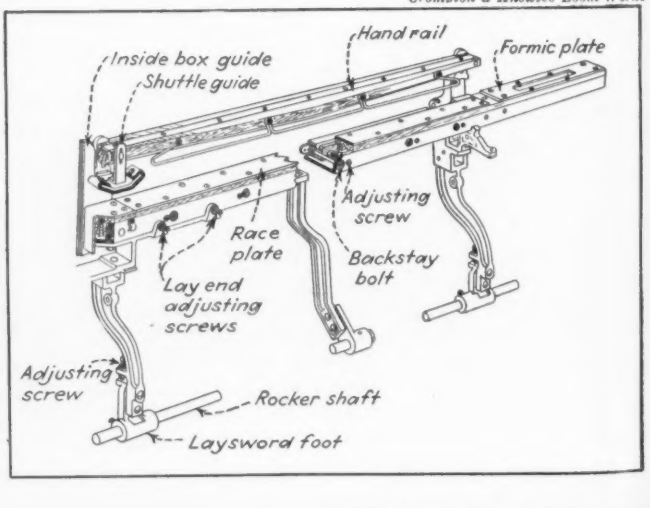


Fig. W30. Conversion parts to form a 4 x 1 automatic loom for a W-3 loom.

Fig. W31. Lay of W-2 and W-3 4 x 1 automatic loom showing construction details.

Crompton & Knowles Loom Works



FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter XVIII (Continued)
The Narrowing Machine

By WALTER A. SIMOND

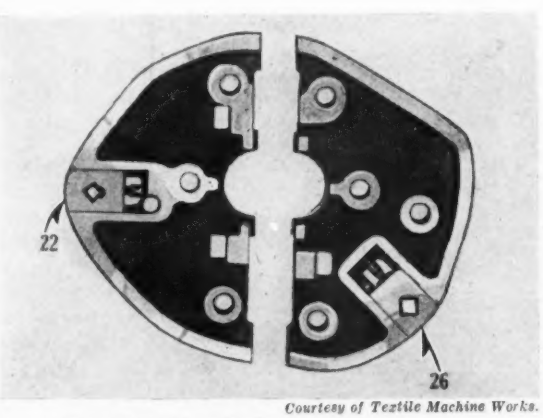
MIDDLE KNOCKOVER-BIT CAMS. Information in regard to the high points of the middle knockover-bit cams on Reading machines is quoted from the "Knitting Machine Lectures of the Wyomissing Polytechnic Institute," as follows:

"The highest point of this cam will, when the needles and narrowing points are moving down to engage each other for the second time, and just before the sinkers and dividers move forward, raise the fabric, which is resting on the knockover bits, to a higher position, causing the thread, which is leading from the loop around the end narrowing point to the tube in the thread carrier, to rise also. The thread will then lead at such an angle that, as the sinkers and dividers move forward, the thread will lie on top of the nose of the end sinker instead of under it. If the thread should be led under the sinker, it will on the next course be laid on the nose of a sinker instead of a divider, causing an imperfect selvage to be formed.

"The high point of the middle knockover-bit cam now slopes downward a little and then rests. As a result, the knockover bits are permitted to drop a little and then remain stationary. The loops on the descending narrowing points will be pushed upward on the narrowing points as the narrowing points move down between the knockover bits. Just before the needles make their second engagement with the narrowing points, which are now in their low position, the slope of the middle knockover-bit cam drops suddenly, permitting the knockover bits to drop suddenly and thus leaving the loops suspended on the stems of the narrowing points instead of resting on the knockover bits. All of the loops around the narrowing points should then be in the same horizontal plane, and the needles should have no difficulty in engaging the loops.

"The reason for this sudden dropping of the knockover bits, leaving the loops suspended on the narrowing points, is: as the narrowing points with the loops around their stems move down between the knockover bits to make their second engagement with the needles, it is possible that some of these loops may be somewhat lower than others; consequently they will be pushed between the knockover bits and the narrowing points, pushing the knockover bits to one side, distorting the loops, and thereby preventing the needles from properly engaging the narrowing points and loops. The sudden movement downward of the knockover bits after the narrowing points have reached their low position will leave the loops suspended freely on the narrowing points so that the needles may engage the narrowing points and pass up through the loops without difficulty."

As pointed out in the February, 1936, issue of the *Reading Record* "Fine adjustment of the narrowing cam for correct action during the transfer operation and when the sinkers and dividers are ejected simultaneously can be made by adjusting the cam bits 22 and 26, Fig. F57. Bit No. 22 is used to give the correct needle depth in knockover bits during the transfer operation. Bit No. 26 controls the height of needles at time of sinker and divider ejection for the purpose of holding the fabric down while the needles move to their highest position." The fabric should be down on the knockover-bit bed when the sinkers and dividers come forward to avoid cutting at the selvage. Bent sinker or divider noses or badly worn slots in the sinker heads may be the cause of stubbed narrowing points; and a kink in the under edge of a knockover-bit may deflect the adjacent needle to cause menders.



Courtesy of Textile Machine Works.

Fig. F57. Needle-bar narrowing cam.

THE HEIGHT OF THE NARROWING MACHINE and its angular setting are important. When a machine is narrowing perfectly and it becomes necessary to change the height of the needles for a change of style, the narrowing machine should be moved in the same direction and for the same distance. Most machines narrow best when the tip of the narrowing points engage the needles halfway from the tip of the needle beards to the bottom of the eye of the needles. When the points are too low, they may be below the full depth of the needle eyes and prevent the needles from being fully imbedded in the narrowing points, and the same result follows flexing the needles too far backward. Usually a $\frac{1}{32}$-in. flexure of the needles when under full pressure is sufficient, and the needle tops should be buried as deeply as possible in the points with the backs of the needles and the center lines of the narrowing points in approximately parallel planes. A fine angular readjustment of the narrowing machine is sometimes necessary, because at re-needling the new needles may be a little more or less rigid than those replaced, and a slight change may provide a more perfect engagement in narrowing. Moving the front shaft of the narrowing machine $\frac{1}{32}$ in. and holding the tip of the points to the standard setting ought to be all that is required for perfect narrowing.

QUESTIONS & ANSWERS

Problem in Carbonizing

Technical Editor:

An interesting problem in conjunction with carbonizing was discussed in the Questions & Answers Department of your February issue. The present writer has had a great deal of experience in carbonizing and may be able to add some information which will be of help to the inquirer. The original inquirer stated in part:

"In our mill we have a continuous piece carbonizing process which consists of immersion in sulphuric acid, squeezing, drying, and baking. I have noticed that when the tank has been emptied and replenished with fresh acid by adding commercial sulphuric acid (98%) to water, carbonizing takes place with a lower concentration of acid than is the case after a period of say four months of carbonizing. Whereas we use a concentration of 70° Tw. after replenishing the tank, it is necessary to use a concentration of 10° Tw. at the end of four months. With the number of pieces carbonized, the concentration has to be gradually increased. I would like you to explain why we have to use a higher concentration of acid as the number of pieces carbonized increases."

The reason why it is necessary to use a higher concentration of acid was explained in the reply in the February issue. Following are some comments on reducing the amount of slime and crystals, etc.

In a certain mill, there is being carbonized through a continuous carbonizing range an average of 60 pieces daily of 16-oz. Marine fabric, Spruce Green, and intermittently 60 pieces of 16-oz. Navy Suiting, Indigo Blue. There is no discoloration with these two different cloths and colors, but the acid tank is emptied and replenished every 2 weeks. The concentration is kept practically static at 7° Tw.

The inquirer can quickly decide which is least expensive, to clean out every 2 weeks, and stay at 7° Tw., or run 4 months without changing and be compelled to use 10° Tw. the greater part of the time.

We know of one mill on indigo goods which submerges the cloth, folding it into the tank, allowing it to soak for 20 min. Of course, the goods come in contact with the sludge on the bottom and sides of the tank and develop white spots in various shapes. It has been found that a heavier concentration of alkali used in the neutralizing removes these spots.

To cut down the slime and the crystals, making it possible to run the bath longer without emptying it and replenishing, an addition of Calgon—Unadjusted (sodium hexametaphosphate) twice a day will dispel a lot of lime. The Calgon is soaked in the usual manner in a barrel, and 2 qt. is added for every 20 pieces put through. D.W.

Leasing a Warp

Technical Editor:

Recently we received an order for warps which specified "open lease throughout." Can you give us your interpretation of this term? (8892)

We are somewhat puzzled ourselves about the interpretation of the order "open lease throughout" since we actually never heard of the expression but must assume that they have reference to a lease produced either by a Scotch hook reed or an open comb type hook reed.

Either one of these reeds is attached back of the sizing box, granting the producing of a lease with the proper shifting of the warp threads. As strings are inserted to produce this lease they naturally will pass through the sizing box, over the drying cylinders, and from there on to the loom beam. However, as soon as the lease appears and before it is wound on the beam, a rod is inserted in place of the strings and as this will grant an even run of the threads onto the beam, we assume that this is the meaning of the "open lease" with which most of the rayon manufacturers are acquainted.

Bobbin Cleaner

Technical Editor:

I would like to obtain a drawing or design of a yarn stripper for removing yarn from bobbins as taken from automatic looms. (8887)

The cost of blue printing various parts, or the sketching of the numerous details involved in a thread cleaner requires a great deal of time. We believe that you could secure a better outline of your needs if you would write to the manufacturers of such equipment. In fact, we would suggest that a machine be purchased as the work it must accomplish certainly should preclude any chance-taking on a hand-made affair.

Infra Red in Carbonizing

Technical Editor:

I have just read an article in the January issue of TEXTILE WORLD by F. D. Snyder of Westinghouse Electric & Mfg. Co., titled "Infra-Red Applied to Carbonizing." I feel that some of the statements therein are misleading. For example, in the second paragraph Mr. Snyder states that "carbonizing of woolen cloth ordinarily is carried out by saturating the fabric with a weak solution of acid, squeezing the cloth to remove excess acid, drying in a tenter dryer heated by steam coils and air circulators so that a temperature ranging from 190 to 220° F. is maintained." On the contrary, no modern mill uses a tenter dryer for carbonizing cloth, but employs a regular roll-type dryer, having both drying and baking chambers. Furthermore, modern practice is to remove the excess acid solution by means of a vacuum extractor instead of squeeze rolls. Also, a temperature of 190° F. is entirely too low and inefficient to dry the cloth properly and quickly previous to baking.

Later it is asserted that a steam-heated baker costs about $10,000. This sum would indeed be a high price to pay for only the baking chamber of a regular roll type cloth carbonizer; about $6,000 would be nearer the truth.

Several years ago a certain prominent textile firm called me in consultation on a drying problem; and during the course of our negotiations, this firm requested me to investigate the infra-red ray lamp drying as applied to their particular problem. These tests showed the following results—it required 19 min. to accomplish with the lamps what a convection type dryer did in 12 min. I believe this is rather interesting.

However, there are cases where the lamps are an adjunct to drying; and those of us who are interested in the evaporation of water from various fibers, fabrics, etc., would be foolish to close our eyes to any benefits that might be obtained, regardless of what they may be, that will tend to speed up any drying processes.

H. O. KAUFMANN
The National Drying Machinery Co.

Government to Buy U.S. Wool Clip

Department of Agriculture has received authority over raw wool and raw cotton

PLANS FOR GOVERNMENT PURCHASE, through the Department of Agriculture, of the 1943 domestic wool clip, and for continued purchase of domestic wool clips through two post-war years indicate that the Government will continue a wool stock-piling program that began even before Pearl Harbor. Up to now the only Government-owned wool has been foreign wool.

The new program came out into the open following a meeting at Washington Feb. 20 of wool trade, growers, and others, admittedly at the insistence of the growers. Such opposition to the proposal as was noted at the time was quieted by assurances that established trade channels would not be disrupted. The same proposal was aired before the Senate Wool Committee last August where it was opposed by WPB as complicated and not in the public interest. It was brought out about that time that growers were getting 141% of parity.

Senator Walsh, of Massachusetts, as a member of the Senate's special Wool Committee, and also in behalf of some members of the wool trade and wool manufacturers in his State, filed a written objection at the Feb. 20 meeting to the proposal as unnecessary. Similar action was taken by Representative Edith Nourse Rogers, also of Massachusetts. However the Boston Wool Trade Association through spokesmen at the meeting made it clear that these objections did not represent the views of the association. Spokesmen for the National Wool Trade Association likewise indicated that they would not oppose the plan formulated by the Department of Agriculture, under whose auspices the meeting was held, if such plan assured that all the usual channels through which the clip has usually passed were kept open.

THE GROWERS' INTEREST is naturally explained in that it puts them under the Government's umbrella. Their clip will be bought at present ceiling levels. If the natural market price should go lower at some future period, the growers would be protected and any loss would be on the Government. If the price should be pushed up, presumably ceiling levels would keep abreast, and growers will benefit.

The same fears that dictated a wool stock-pile at the outset are no longer as substantial as formerly. Nevertheless, War Production Board and other official agencies are on the side of continued stock-piling, if only as a hedge against unforeseen developments. The principal difference between the present program and the so-called 1918 plan is in the ceiling feature that prevails today.

As a sidelight, the effect of the Government's program will be to hold the domestic umbrella as well over foreign wool growers who sell to the Government in this period. This country is committed to purchase the Uruguayan clip this year, which it is understood will be on a suitable parity with prevailing price for the domestic clip. To some extent, according to both growers and official quarters in Washington, cost of wool production has already gone up, incident to war conditions, and this increased cost is taken into account in purchase plans, as applied to the domestic clip, and presumably will be reflected on foreign producers.

On the amount of this increase a Congressman, Representative Hal Holmes, of Washington, who is a wool grower, stated at the meeting that his own operating costs in 1942 had risen 43½%. This raises the question as to whether, when the program is in full gear, the present ceilings will be forced up. Growers indicated at the meeting an intention to press for a ceiling that recognizes current increased production costs. F. R. Marshall, secretary of the National Wool Growers' Association, stated that average wool producing costs had risen from 35.1c. per lb. in 1940 to 40.6c. in 1942, and will be higher this year.

The resolution adopted by the growers, which outlines a purchase plan, is evidently being followed closely in the plans of the Department of Agriculture, which will administer the program. The growers asked for Government purchase of the 1943 clip and of all succeeding clips extending for two years following the first Jan. 1 after the proclaimed end of the war, or "until the strategic stockpile is disposed of." They asked that the price be the ceiling under the Price Control Act, with increases commensurate with increased production costs.

The new plan involves a preference system on domestic wool so that each year's home clip will be consumed before the next one comes around or before any extensive substitution of foreign wool is made. Nothing touching the "public interest" in this wool matter was developed at the meeting and no representatives of the public were scheduled. The hearing was a tete-a-tete for wool growers and distributors—not even the wool manufacturer being heard from directly.

Growers and their marketers made it plain that the mounting Government stock-pile, "the greatest collection of wool the country has ever seen," was regarded as a menace to any reasonable stability in the market. They remember, or have heard, what happened to wool after the last war and particularly in the year 1919. The present plan relieves the wool grower of sleepless nights and leaves the Government (or the taxpayer) holding the bag.

The Washington meeting was presided over by Grover B. Hill, Assistant Secretary of Agriculture, who appointed a Committee of nine to advise with him on the final formulation of the program. On this committee are three representatives of the wool distributing trade, four of the wool growers and two of the wool cooperatives. There are no representatives of the manufacturers nor of the public.

RAW WOOL AND RAW COTTON MOVE FROM WPB TO D OF A

After weeks of discussion, authority over distribution of wool and cotton has been transferred from the textile division of the War Production Board to the Department of Agriculture. The formality of transfer consisted of an identical letter from the Director of the Bureau of the Budget to Claude Wickard, Secretary of Agriculture and to Donald Nelson, Chairman of WPB. Because these two textile fibers are agricultural products, jurisdiction over them was regarded as logically inseparable from the food program. Wickard's first act under his new authority was to call a hearing on Government purchase of the entire wool clip.

NEWS OF THE MONTH

National Federation Sums Up Its Cooperative War Effort

The annual meeting of the National Federation of Textiles was held Feb. 16 in New York. W. G. Lord, of Galey & Lord, was reelected president, and Otis Stanton, of Hathaway Mfg. Co., vice-president. In his annual address, Mr. Lord commented on the change in the Federation from an organization of service bureaus to one geared to cooperative action in solving wartime emergency problems. He also mentioned the association's work now in progress in long-term planning to aid the industry in meeting post-war problems.

In her report as secretary, Irene L. Blunt, stressed the fact that during 1942 there was completed the much-desired concentration of mills weaving synthetic fibers within one trade association. She reported that the great volume of Government regulations during the year called for a constant flow of information to members. Continued cooperation with the armed services in their textile purchasing programs loomed large among the Federation's activities. This included further collaboration with the Army Air Forces in arranging meetings with mill representatives to discuss and later actually negotiate contracts for Nylon parachute fabric, shroud lines, tapes and threads.

The secretary's report also cited cooperation of the Federation with the Ordnance Department in loaning its offices for the start of negotiations for flare parachute cloth and in working out various technical problems connected with fragmentation bomb chute cloths.

Miss Blunt also noted the war's effect on the Design Registration Bureau, reporting only 5,361 designs submitted to the bureau in 1942, against 11,322 in 1941.

▼ ▼ ▼

More Rayon Production Asked

Every rayon producer in the country has been requested to increase output of rayon fiber and yarn to the maximum levels attainable with present manpower and facilities. The appeal came from Frank L. Walton, director of the Textile Division of WPB. Mr. Walton said that there are some military uses for rayon today which cannot well be taken care of by other fibers.

▼ ▼ ▼

No Cotton Yarns Frozen

Reports that some coarse carded cotton yarns would soon be frozen have been denied by Thomas M. Bancroft, chief of the cotton branch of the Textile Division of WPB. Mr. Bancroft said that some conferences had been held in quest of the best method of channeling the required poundage of special carded yarn for binder twine for the coming harvest season. Whatever plan is decided upon will mean that a quantity of such yarn will be given preference for the production of binder twine, etc.

Recent OPA and WPB Orders

Among recent OPA and WPB orders are the following:

Rayon hosiery price ceilings, covering mill, wholesaler and retailer, were set by OPA Order No. 339 on March 8, effective April 15, which will mean drastic cuts on some numbers and result in savings to the consumer of 5 to 40¢ per pair from present levels. Ceiling price, grade and gauge is to be stamped on the top of the stockings to guide consumers. Normal industry differentials are so narrowed as to give branded lines little reason for being. On 45-gauge branded lines, which have averaged $8.25 from the mill, the ceiling is set at $6.95; on 45-gauge unbranded, which have averaged $7.50, the ceiling is $6.70. Wholesalers' mark-ups are 13% on full-fashioned and 15% on seamless. The industry was deeply shocked by the levels and regulations.

Blended-yarn maximum selling prices are revised downward by OPA, Amendment No. 12 to Revised Price Schedule No. 58.

A simplified formula, which the cotton-textile manufacturer can use to determine ceiling prices of products not otherwise covered, has been devised by OPA. The document is MPR 118, Amendment No. 16.

A differential of 7¢ per lb. below present ceilings was established by the OPA for certain carded cotton yarns which, under a program announced by the Department of Agriculture, are to be substituted for scarce sisal and henequen fibers in the manufacture of binder twine.

License as a condition of selling yarns, textiles, textile products, and services related to these commodities, except at retail, is ordered by OPA. Licensing is automatic. It is a legal device for enforcing pricing regulations. The license of a violator may be lifted.

Maximum prices of rayon tops are cut 2½ to 4½¢ per lb. and rayon noils approximately 6¢. These reductions are possible partly because of a simultaneous "roll back" of from 3 to 7¢ per lb. in prices for rayon waste.

Limitation of number of styles of men's, women's and

IMPREGNATED COTTON FABRIC surrounds blankets of Fiberglas insulation which are used as shown above in new-type portable shelter for Army Air Corps personnel in Arctic climates. The insulation provided in the walls and flooring reduce from 27,360 lbs. to 6,790 lbs. the weight of fuel that must be transported to maintain in each shelter, throughout the heating season, a temperature in which men can live comfortably. The shelters themselves can be transported by air.

A DECORATIVE NOTE for the coming swimming season is this suit of new Koda jersey, all Eastman acetate rayon, a-bloom with a graceful floral print. This fine knitted texture is ideal for the molded lines of the bodice as well as the gently flaring skirt. Jersey from Cohn-Hall-Marx.

children's knit underwear to 75% below last year has been ordered by WPB in order No. L-247, effective April 1. The number and kind of fabrics each manufacturer may use is cut by the same figure. Most purely decorative effects are banned.

▼ ▼ ▼

ACMA Convention in Atlanta, April 30

Annual convention of American Cotton Manufacturers Association will be held at Biltmore Hotel, Atlanta, Ga., Friday, April 30. It will be a streamlined, one-day program, with no social functions. It will include the president's address, report of secretary and of committees, election of officers, and other business.

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Knitted Outerwear to Meet

National Knitted Outerwear Association will hold its 25th annual dinner on April 8, at Hotel Astor, New York. The feature will be a drive for bond sales totaling $350,000 to effect the purchase of a Flying Fortress bomber to be named "The Spirit of Knitted Outerwear." The association's annual convention marking its silver anniversary will precede the dinner.

▼ ▼ ▼

To Clear All Army Duck and Webbing

A Quartermaster duck and webbing pool has been formed at Jeffersonville Depot to purchase all such goods required by the various Army branches. Jefferson-

WONDERFUL!

How DEVOPAKE hides and covers any surface *in just one coat!*

WONDERFUL how Devopake **cuts** costs . . . **saves** manpower. School commissioners in a large city (name on request) have reported that Devopake saved them $10 a room in painting costs. **High hiding power** of Devopake saved washing down of walls beforehand, and applying of an undercoat. **Spreading quality** of Devopake cut gallonage from former 5 gallons to a room to 2¾ gallons. **Easy brushing** quickened time of application . . . **saved** man hours.

No maintenance man has to go to school to figure out that lesson. For his next job . . . he will specify Devopake and let this **self-sealing primer and finish coat in one** save time on the job, with minimum interruption to essential activities. He will continue to cash in on its long wear that stands many washings. Use Devopake and enjoy the reflection and diffusion of maximum available light that this truly flat wall finish insures. Devopake now comes in **7 practical colors.**

Specify Devopake on your next paint job and *save time . . . save money . . . enjoy complete, guaranteed satisfaction.*

Devoe's maintenance paint line is built to meet all your requirements including high resistance to fungi, fumes and moisture. Write us today for complete information that can help you solve your maintenance paint problems.

DEVOE & RAYNOLDS CO., INC.

The 189th Year of the Oldest Paint Maker in America

FIRST AVENUE AT 44TH STREET, NEW YORK, N. Y.

New water-repellent textile finish *(By the makers of Johnson's Wax)*

DRAX for uniform cloth, material for work clothes, shelter tents, sleeping bags . . . DRAX for civilian fabrics of all kinds . . . the demands and uses for this easy-to-use new textile finish grow and grow.

Have YOU the facts about DRAX? This stable, aqueous emulsion of waxes, aluminum salts and emulsifying agents is a remarkable textile finish. DRAX gives fabrics a high degree of water-repellency and resistance to spots and stains. And mark this: DRAX is simplicity itself in application. Just apply in a single bath . . . in any available type of padder.

More Facts About DRAX

Important characteristics not found in many water-repellents are found in DRAX . . . due to a special method of regulating the colloidal particle size during its manufacture. DRAX, for example, remains completely stable in solution during storage . . . you can apply DRAX at temperatures varying from room to boiling . . . you dilute it with ordinary tap water . . . requires a minimum of acid regulation during application.

DRAX is also available in special formulations containing *mildew-resisting* agents. Write for facts about DRAX.

S. C. JOHNSON & SON Inc.

INDUSTRIAL WAX DIVISION, DEPT. TW-33, RACINE, WIS.

☆☆ *Buy United States War Savings Bonds and Stamps* ☆☆

ville is now the only official source of standard gray and finished duck and for standard webbing described in Army specifications 6-185c, AN-JJ-W-151, and 6-197a; bandoleer webbing described in specifications 6-186, and elastic webbing described in specifications AN-JJ-W-154. QM has procured, or is procuring, enough of these materials to meet the estimated needs of all branches of the Army. All prime duck and webbing contractors with any and all branches henceforth will secure the necessary quantities of these materials for conversion into finished Army items from Jeffersonville at the established average prices determined by QM. This makes it unnecessary for Army contractors to attempt to make purchases in the open market, and is expected to prevent possible overloading of the duck and webbing industry.

▼ ▼ ▼

New Sateen for Army Trousering for Mountain Troops

A new sateen material with unusually high tearing strength, superior wearing qualities, and superior wind-resisting qualities, to be used in making trousers for mountain troops only, has been developed by the Quartermaster Corps. It is a five-harness, 9-oz. sateen, made from combed cotton yarn, same as is used in the 8.2 oz. khaki twill.

▼ ▼ ▼

National Cotton Week May 17 to 22

The nation-wide observance of 1943 Cotton Week will be held from May 17 to 22, according to the Cotton-Textile Institute and the National Cotton Council, co-sponsors of the event. Emphasis will be placed on those cotton goods remaining in fairly liberal supply and on the many cotton products that have been developed to take the place of the numerous items forced off retail shelves by the war. Retailers are expected to employ the event to drive home to consumers the necessity of conserving those cotton products which are short, such as sheets, underwear, socks, surgical supplies, etc., because of heavy buying for military purposes.

NEW POSTER for the coming "Cotton Week". The full-size poster is 16 by 19¾ in., in three colors featuring red, white and blue, will be supplied by the Cotton-Textile Institute and National Cotton Council without charge for display in stores, showrooms and public places.

On Goes the Brave Fight to Make Men Live

They carry first aid kits instead of guns . . .

They work with stretchers and surgical bandages instead of mortars and grenades . . .

The men of the Army Medical Corps and the courageous Army nurses look to the Textile Industry for vital supplies in their fight to make men live.

With one medical man to every twelve infantrymen in this great new Army of ours, there are countless first aid kits to be filled with battle dressings of cotton flannel and gauze.

At field hospitals within range of the enemy's guns, there are stretchers, tent fabrics, bedding and supplies needed in tremendous quantities.

These are some of the great contributions of the Textile Industry in this war.

Butterworth Machines play their part in the battle of production at every step in the wet end of Textile Finishing—bleaching, boiling-out, drying, calendering, dyeing.

All our facilities not required for Ordnance production are available to help you solve your finishing problem. Let us serve you now.

H. W. BUTTERWORTH & SONS CO.
Phila., Pa. Serving the Textile Industry since 1820
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

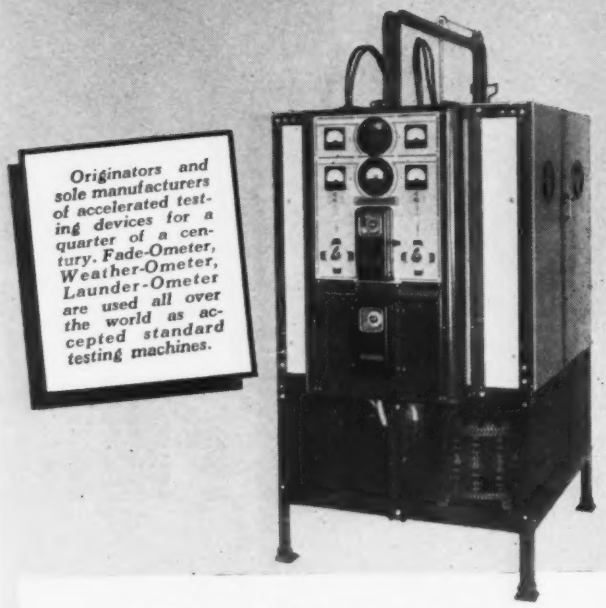
Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

SPEED

in testing war materials requires the

ATLAS TWIN ARC WEATHER-OMETER



Originators and sole manufacturers of accelerated testing devices for a quarter of a century. Fade-Ometer, Weather-Ometer, Launder-Ometer are used all over the world as accepted standard testing machines.

TEST RESULTS TWICE AS FAST

THE new Atlas Twin-Arc Weather-Ometer has been developed to save time where speed in testing is essential.

Where Federal Specifications call for a definite number of testing hours in the Atlas single arc Weather-Ometer, this time can be cut in half in the Atlas Twin-Arc.

Exclusive Atlas Twin-Arc Weather-Ometer features:

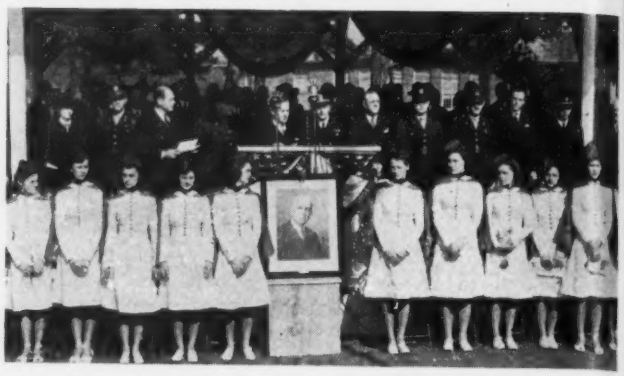
1. Temperature control.
2. Unlimited range and control of Light and Water Spray Periods.
3. Adjustable and automatic timing.
4. Insulated test chamber.
5. Operates continuously 24 hours without manual attention.
6. Carbon cost 28c per day.
7. Full automatic—Safe to operate unattended overnight.
8. Control panel contains Volt and Ammeters—Time Meter—Light and Water Cycle switch—Automatic time cut off switch—Voltage adjusting switch—Direct reading thermal regulator—Reactance Coil (cut power cost in half).

The Single Arc Model is a popular machine where high speed is not required.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St., Chicago, Illinois

ATLAS-OMETERS

WEATHER-OMETER ★ LAUNDER-OMETER ★ FADE-OMETER



WARE SHOALS GETS "E" AWARD: Colonel C. W. Woodward, Commanding Officer of the Charlotte Quartermaster Depot and Lt. Commander Ernest Burwell of the Charleston Navy Yard, represented the Army and Navy in presentation of the "E" Award Banner and pins to the Ware Shoals (S. C.) Mfg. Co. and employee representatives. Dr. William P. Jacobs (at the speaker's desk) was master of ceremonies. In the center is a picture of the late Benjamin D. Riegel, past-president and founder of the enterprise. Mrs. Benjamin D. Riegel, widow of the founder of the enterprise, is the first at the left. John L. Riegel incumbent president of the Ware Shoals Mfg. Co., is third from the left and Mr. W. C. Cobb, first superintendent of the Ware Shoals plant can be seen on the extreme right.

Latest "E" Awards

The following firms have been awarded the Army-Navy "E" since publication of the last previous list in the February issue of TEXTILE WORLD:

Arlington Mills, Lawrence, Mass.; Mills Mill No. 1, Greenville, and No. 2, Woodruff, S. C.; Fairforest Finishing Co., Spartanburg, S. C.; Exposition Cotton Mills, Atlanta, Ga.; Absorbent Cotton Co. of America, Valley Park, Mo.; Newnan Cotton Mills, Newnan, Ga.; Trion Co., Trion, Ga.; Mohawk Carpet Mills, Amsterdam, N. Y.; Philadelphia Textile Finishers, Inc., Philadelphia, Pa.; Brookside Mills, Knoxville, Tenn.; Saco-Lowell Shops, Biddeford, Me.; Ohio Injector Co., Wadsworth, Ohio; Ilg Electric Ventilating Co., Chicago, Ill.; Caterpillar Tractor Co., Peoria, Ill.; Fairbanks, Morse & Co., Beloit, Wis., Freeport, Ill., Three Rivers, Mich.

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Georgia Tech. Textile School Graduates

The A. French Textile School of Georgia School of Technology, Atlanta, Ga., held its commencement exercises on Feb. 1 and graduated seven students with the degree of B.S. in Textile Engineering. Of the group, Marvin W. Arkin, of Savannah, Ga., was awarded the NACM medal for the highest scholastic record. This class would have been graduated next June, had it not been for the speed-up resulting from the war.

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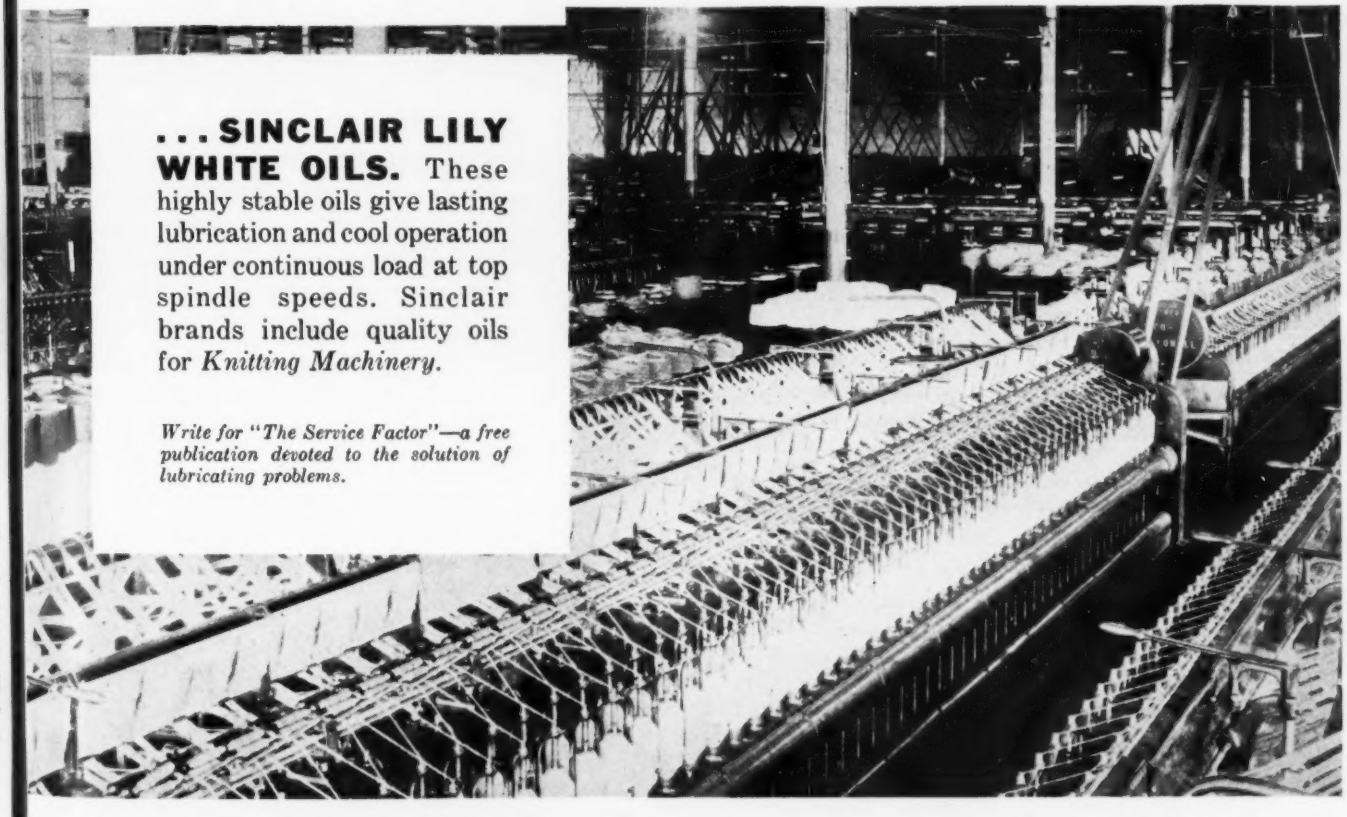
India Now Making U. S. Army Goods

A number of British India's large textile mills are now at work on hot-climate uniform fabrics for the U. S. Army according to E. R. Stettinius, Jr. This arrangement is Lend-Lease in reverse. Presumably the materials are for the use of American units cooperating with the United Nation's forces in India and China. Their use saves shipping space on vessels from this country.

GUN POWER needs manpower — and *productive* power. To maintain peak production in *TEXTILE MILLS* use . . .



. . . SINCLAIR LILY WHITE OILS. These highly stable oils give lasting lubrication and cool operation under continuous load at top spindle speeds. Sinclair brands include quality oils for *Knitting Machinery.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft Worth

EXSIZE may cut your desizing time!

© 1943, Pabst Brewing Company, Milwaukee, Wisconsin

● Time economies are more essential than ever these days. You may be able to save minutes in desizing—and in following operations—by using EXSIZE, the concentrated malt enzyme desizer!

EXSIZE works rapidly, with a gentle, natural action. Its malt enzymes are easier on all fabrics. It is thorough—washes out completely—and leaves fabrics soft, clean and better able to take a uniform bleach and dyeing, with a reduction in the amount of chemicals needed for these operations.

EXSIZE may do even more than save you time. It may save you money, too—in its low cost, ease of preparation and lowered operational expense. Write for our free descriptive booklet, then try EXSIZE on a sample run. If you desire, a trained Pabst field man will help you. There's no obligation.

PABST SALES COMPANY
CHICAGO, ILLINOIS
Warehouses at New York, and
Textile Warehouse Company, Greenville, S.C.

PABST BREWERIES

American Woolen's Sales Up, Net Profit Down

American Woolen Co. reports net profit after all charges for 1942 of $4,823,831 on net sales of $196,031,461 compared with similar net profit for 1941 of $6,943,286 on a business of $145,749,428.

Moses Pendleton, president of the company, in his annual report, points out that the year's sales were about 34% greater than a year ago. The net profit, he states, was equal to 2.46% on the net volume of sales, compared with 4.76% in 1941. The reduction is attributable to increased taxes and renegotiation of war contracts.

The company's net working capital, at the end of 1942, totaled $43,521,697, equal to $124.34 per share of preferred stock, against $39,283,980 at the end of 1941. Inventories on hand at the end of the year were valued at $55,119,616, against $54,417,884 a year previous. Unfilled orders were $98,009,168, compared with $96,213,807.

The company has now for two years laid aside $2,000,000 toward a war contingency reserve.

"Looking forward to the end of the war," said Mr. Pendleton in his report," the management realizes that the unprecedented accumulation of raw materials and supplies, production schedules that impose extraordinary burdens on machinery and equipment, and increased costs, which are inevitable results of the war program, will raise serious problems for the company. Adjustments will be difficult and losses may be heavy."

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N. C. Textile Institute Nearing Completion

The State Textile Institute for the training of textile workers in North Carolina is nearing completion near Belmont and will begin operation as soon as machinery is installed. The $200,000 project is awaiting additional funds from the North Carolina Legislature to aid in getting the machinery, but the grant is expected to be made soon and it is hoped that workers will be training at the school within 60 days.

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Textile Research Men Needed

The United States Civil Service Commission has asked for names of men and women, with sound basic training in economics and statistics, who are capable of conducting research studies in the textile field. The commission states that the Federal Government is facing an increasingly difficult problem in securing well-qualified personnel for civilian war service positions.

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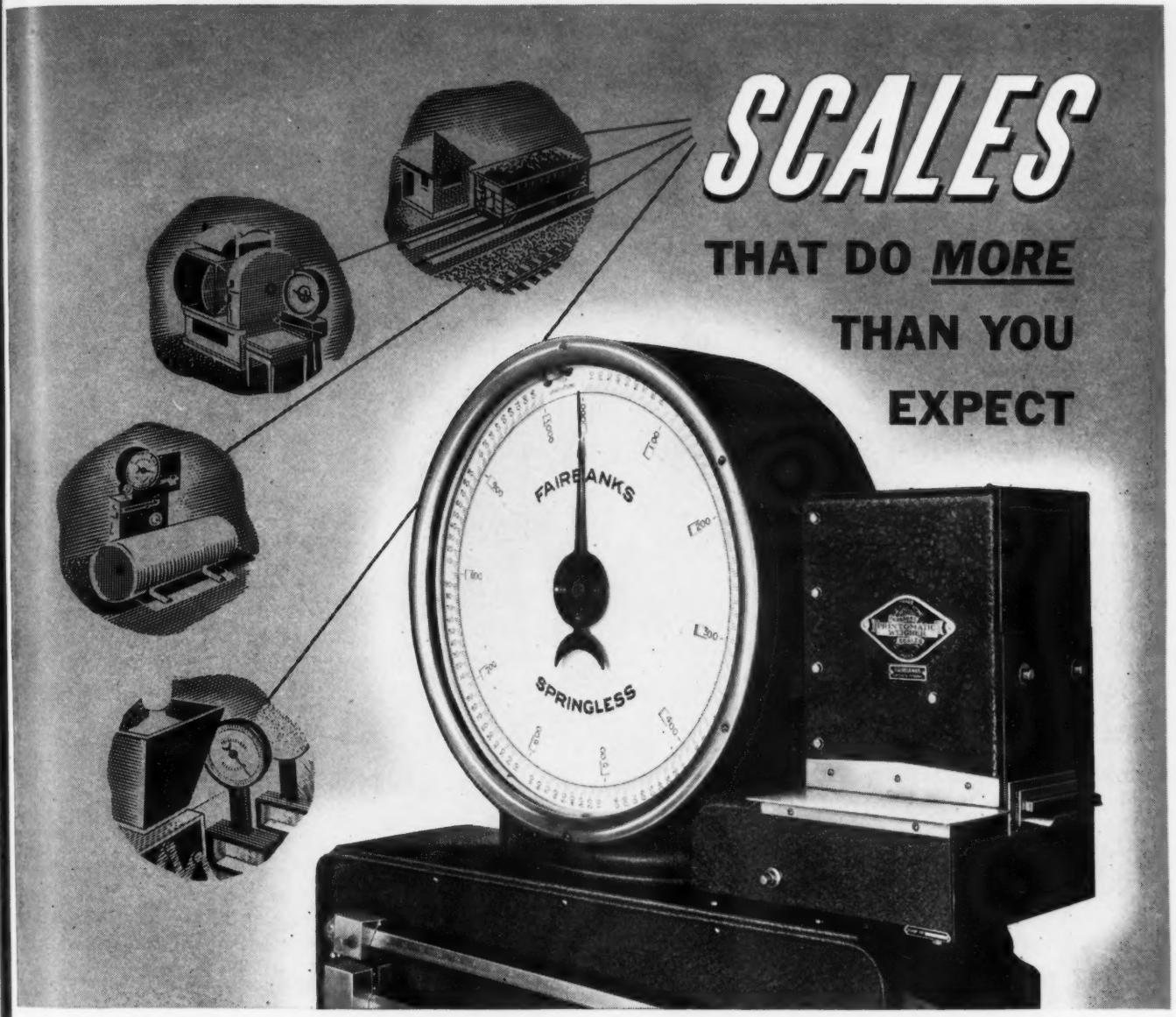
Mill Land Gardens for Rhode Island

A vigorous movement to utilize vacant land owned by textile mills for vegetable gardening this spring has been launched under the initiative of Edward F. Walker, secretary-treasurer of the Rhode Island Textile Association, Providence. To be known as Victory Gardens and operated by employees, these areas may exceed several hundred acres if interest continues to grow in the project at the



OF course, Fairbanks Scales are big, husky, and accurate. You have a right to expect these things in *any* good scale—and particularly of Fairbanks Scales with the world's broadest scale manufacturing experience behind them.

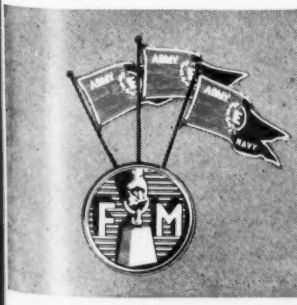
The feature about Fairbanks Scales that may surprise you the most, is their ability to do things you *don't* expect of scales.

Here are a few of many jobs done by Fairbanks Scales:

- They count small parts—more accurately than manual counting
- They weigh carloads of coal in motion and make a printed record of each weight
- They automatically control paint ingredients
- They automatically control aggregates
- They "keep the books" in steel plants, making printed records of incoming and outgoing shipments
- They keep accurate records on chlorination in water treatment
- They record the *flow* of liquid chemicals
- They guard secret formulas in compounding
- They control batching in bakeries
- They prevent disputes by eliminating the human element in weighing.

AND all of these things, only the beginning of the story, they do automatically and mechanically thereby eliminating human errors.

How Fairbanks Scales can be fitted into your production flow to speed up operations and eliminate errors may prove to be the most interesting discovery you ever made. Investigate now. Write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Illinois.



FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
MOTORS
GENERATORS
SCALES

WATER SYSTEMS
FARM EQUIPMENT
STOKERS
AIR CONDITIONERS
RAILROAD EQUIPMENT

Scales

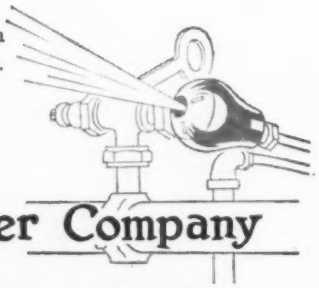
A Reliable Atomizer

Leaky atomizers are *not* reliable. They fritter away your expensive compressed air—on the sly. They leak in places not easily found; places you are not looking for.

Parks Turbomatic Atomizer

"leaks" *in one place*; where vapor is made and pushed out. Air pumped in comes out where it is supposed to. The TURBOMATIC (the atomizer with the diaphragm) is efficient . . . . Stays so.

Interchangeable with earlier Turbo models.



Parks-Cramer Company

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

present rate. Mr. Walker states that it is safe to assume that hundreds of mill families all over the State will be independent of vegetable suppliers on their menus during the coming summer and the winter of 1944.

Among the mills cooperating are the Wanskuck, United Nets, Esmond, Fruit of the Loom, J. & P. Coats, Interlaken, Cranston Print, R. I. Lace, Cadillac, Priscilla Braid, Cooper Kenworthy, Columbia Narrow Fabric, Sayles Finishing, Lonsdale, Wolfenden, and Wakefield Woolens. United Nets of Central Falls has 160,000 sq.ft. available which it has mapped on a bulletin board to enable employees to make their garden plot selections. Wanskuck has arranged to have the land plowed and harrowed and to divide the gardens into 40x 90-ft. rectangles, turning over three city lots for the purpose.

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Glossaries on Rayon

Two glossaries—one of terms used in connection with rayon, and the other of terms in connection with rayon fabrics—have been prepared by Courtauld's (Canada) Ltd., for the use of retail personnel managers and buyers of departments featuring rayon merchandise.

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An Up-to-Date Milk Man Story

It looks as if the old milk man jokes are out of the window for the duration, but here's a new one to take their place. It's about milk women, who are being hired as women drivers by a Philadelphia milk concern. Not only will they carry milk, but they will wear it. The company has announced that the uniform for these drivers will be a red, gray and white ski suit made of a material largely made of Aralac, the casein product. The gray suit and the visored cap are made of Aralac, while the visor of the cap and the buttons of the suit are to be made from a plastic, in turn made from casein.

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British Empire Wool Clip Increasing

A recent British release on the value of wool to the war effort points out that nearly 50% of the world's wool is produced in the British Empire. In the 1940-41 season, production in Australia amounted to 1044 million lb., that in New Zealand to 332 million lb., and that in South Africa to 260 million lb. It is estimated that during the 1941-42 season the Australian production was 1070 million lb., that of New Zealand 332 million lb., and that of South Africa 260 million lb. Among the non-Empire wool, producing countries, South America is the chief. In the 1940-

TEXTILE CALENDAR

National Knitted Outerwear Association, 25th annual convention and dinner, Hotel Astor, New York, Apr. 8, 1943.

National Association of Hosiery Manufacturers, annual meeting and conference, Waldorf-Astoria, New York, April 16 and 17, 1943.

American Cotton Manufacturers Association, annual convention, Atlanta-Biltmore Hotel, Atlanta, Ga., Apr. 30, 1943.

National Cotton Week, May 17 to 22, 1943.

Swim-for-Health Week, June 21 to 28, 1943.

We want to thank you, the many thousands of you who in the past few years have made Johnson's Wax-Fortified Paints and Enamels one of America's fastest selling brands. But now we must discontinue the manufacture of this most efficient paint. Certain of its ingredients are urgently needed for more important work in the war program.

To take over this job of protecting your surfaces in the most efficient manner possible today at the lowest cost, S. C. Johnson & Son, Inc., have developed Johnson's War-Formula Paints — retaining as many as possible of the outstanding advantages of Johnson's Wax-Fortified Paints.

AND NOW WE WANT TO TELL YOU ABOUT THESE

War-Formula PAINTS

. . . Specially Developed for

- *Cotton Mills*
- *Knitting Mills*
- *Silk Mills*
- *Woolen Mills*
- *Power Plants*
- *Warehouses*
- *Machinery*
- *Housing*
- *Offices*
- *Converters*

These War-Formula Paints and Enamels are made by skillful blending of fine paint resins. They have the endurance and maintenance economy so needed today.

Johnson's War-Formula Paints require no special preparation or care in application. Brush or spray them on old or new surfaces of wood, brick, metal, plaster or any painted or unpainted surface.

Send for full particulars today. These paints and enamels are specially made to meet present maintenance problems.

S. C. JOHNSON & SON, Inc.

Industrial Maintenance Division, Dept. T-33

Racine, Wisconsin

"Send for your copy of this catalog today!"

S. C. JOHNSON & SON, Inc., Dept. T-33
Industrial Maintenance Division, Racine, Wis.

Please send me a copy of your illustrated booklet, "Johnson War-Formula Paints," giving complete information and specifications for the use of Johnson's new War-Formula Paints and Enamels.

Name _____

Position _____

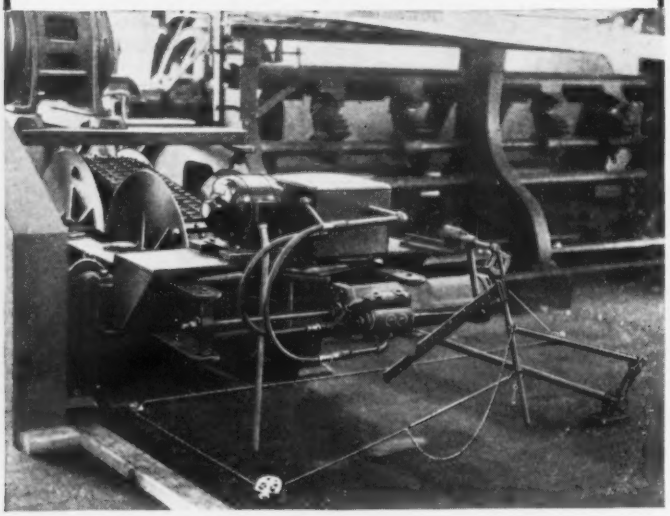
Firm _____

Address _____

City _____ *State* _____

Buy United States War Savings Bonds and Stamps

BEAMER OUTPUT *Doubled*



The heavy spindle-driven beamer shown above is driven through a hydraulically controlled REEVES Variable Speed Transmission, which automatically maintains the yarn speed as the beam diameter builds up. A manually operated foot pedal connected to control lever permits operator to bring beamer to slow speed for stopping or starting, or for piecing-up ends, inserting cut marks, etc. This combination of automatically maintained yarn speed and easy adjustment of speed at any time has resulted in approximately doubling output of beamer; also eliminates overtime previously required. REEVES Variable Speed Drives are standard equipment on many different types and makes of textile machines, and one of the three basic REEVES units, shown below, can be economically applied to any driven machine in service. Write for Catalog-Manual WG-419.

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

ACCURATE VARIABLE *Reeves* SPEED CONTROL

Left to right: TRANSMISSION provides infinite speed adjustability over wide range, 2:1 to 16:1 inclusive; modern, compact, open and enclosed designs . . . VARI-SPEED Motor Pulley, simple, direct drive for requirements from fractional to 15 H.P.; 3:1 range . . . MOTODRIVE combines motor, speed varying mechanism and reduction gears.

41 season her output was 703 million lb., and the estimated total for 1941-42 is 689 million lb. These quantities are supplemented by the wool grown in the United States, Russia, and China.

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Bay State Tax Threat Opposed

Tax bills threatening Boston's position in the wool trade were opposed on March 2 at a hearing of the Massachusetts legislative committee on taxation. These measures would tax personal property pledged or mortgaged; personal property held under consignment or similar contract; and would provide that if personal property is located in Massachusetts and is not taxable where situated, it must be assessed upon the owner in the place where he carries on his business.

C. J. Fawcett, general manager of the National Wool Marketing Corp., Boston, stated that the proposed bills would result in additional taxes of the order of 1.6 c. per lb., or 1.5 times the commission received on typical bags of consigned wool. The National company owns and operates 1,000,000 sq.ft. of wool storage space in Boston, and has 155,000 bales of Government-owned wool in storage on the premises. No tax legislation should be enacted which would interfere with a Government program designed to build up a wool stock against possible shortage of imports, the speaker said. The proposed taxes would tend to drive business away from Boston, although 90% of the country's wool clip is consumed within 400 miles of that city.

R. P. Hallowell, of Hallowell, Jones & Donald, Boston, opposed the bills, pointing out the impossibility of trying to collect such taxes from Western ranchers, who would refuse to ship to Boston if such taxes were imposed on them.

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This and That

Incandescent mantles for kerosene lamps are being made of spun rayon yarns of Avisco high-tenacity viscose rayon staple fiber, according to a recent announcement by American Viscose Corp.

Spun rayon yarn manufacture by the Perlok System was described by J. L. Lohrke at a meeting of the American Association of Textile Technologists held March 3, in New York.

Finishing of rayon fabrics was discussed by two speakers at a meeting of the New York Section of the American Association of Textile Chemists & Colorists, held March 5. Clark Heydon of United Piece Dye Works, and Dr. H. H. Mosher, of Onyx Oil & Chemical Co., were the speakers.

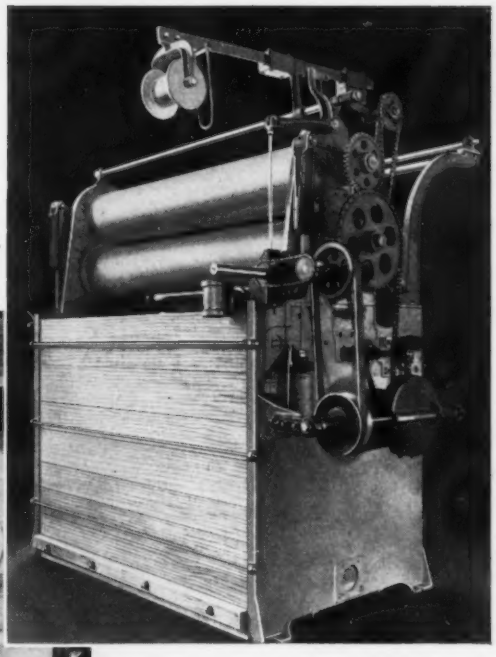
Temporary scarcity of starch is the reason for WPB's request directed to southern cotton mills asking that they do not use priorities or preference ratings for purchase of this material during the next few months. If mills will operate on a close margin until stocks of starch can be augmented, there will be no acute shortage, according to WPB officials.

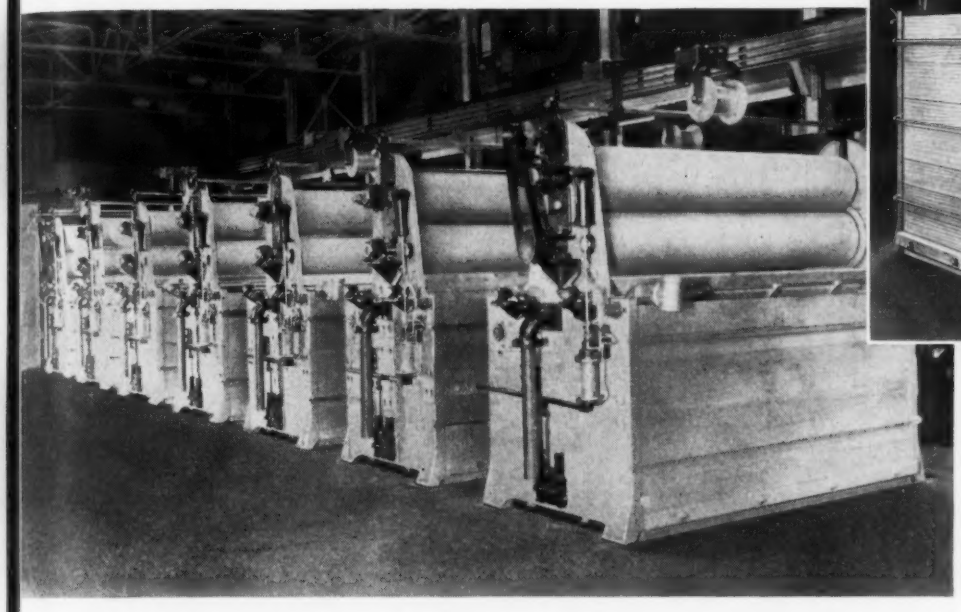
Synthetic fibers production from soy beans is covered in a patent which has been assigned to Tubize Chatillon Corp. The process covered by the patent is understood to have been developed by Russell O. Denyes at Mellon Institute.

Salvage of 372,158 lb. of silk and Nylon from donated stockings, during the Nov. 15 to Jan. 15 period is reported by P. C. Cabot, director of WPB Salvage Division.

Maj. Gen. E. B. Gregory, Quartermaster General, who has been on a tour of the war areas adjacent to Europe is quoted to

HOW TO SCOUR OR NEUTRALIZE CLOTH AT HIGH PRODUCTIVE RATES WITH LOW POWER; WATER AND LABOR COSTS





THE new Hunter Continuous Washer is pictured on this page. It will scour cloth clean up to 35 yds. per minute depending upon the weight, blend or type of goods.

It affords continuity of production between fulling and drying. After the goods enter the Washer, they do not require any attention until they leave the Dryer. On leaving the Washer, the goods fall into a Scray, from which they can be picked up by a Scutcher. After they are opened by the Scutcher, they pass through a pair of heavy Pneumatic Squeeze Rolls and directly into the Dryer.

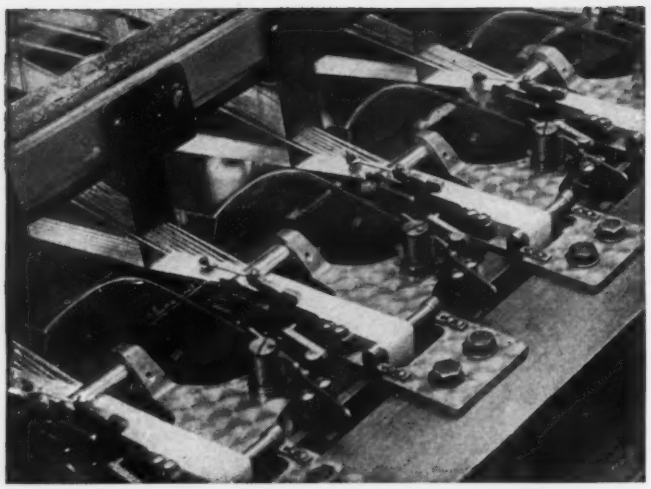
The use of the Hunter Continuous Washer saves space. In some instances, it will do the work of ten Dolly Washers in about one-half the floor space, and requires less than one-third the horse power required to drive its equivalent in Dolly Washers.

Four men should be able to run the Washer, Scutcher, Squeeze Rolls and Dryer, as against eight or nine men for the same production when Dolly Washers are used.

The Washer is ruggedly built with solid cast iron frames machined at contact points, and there are anti-friction bearings throughout. Heavy rubber covered squeeze rolls are furnished, which are equipped with either patented hydraulic or pneumatic tension control. Whip roll, stop motion, etc., are stainless steel. The machine can be stopped or started from seven different stations on the Washer, and all bowls are driven from one side shaft running in anti-friction bearings. The machine is very versatile, and will handle all weights and classes of goods.

For actual operating figures in well-known mills, you are invited to write to

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS
FOUNDED 1847



Change with the Times

CLUTSOM HIGHSPEED SHUTTLELESS LOOM

We are still planning for War but many executives are planning ahead for Peace too.

Vast production of narrow fabrics will be needed after the war and the trade will go to those mills best equipped. It is time to consider weaving in the modern way, time to discard the old, time to think in terms of speed and high production at lower cost. Time to change with the Times.

Why not let us give you a demonstration of weaving in the modern way—those old type looms must be wearing out under the wartime beating they are taking.

CLUTSOM MACHINES INC.

205 EAST 42 STREET NEW YORK

Telephone MUrray Hill 4-2327

FACTORY: Springdale, Connecticut

the effect that he sees little likelihood of any change in the general issue of field clothing for American troops.

Exeter (N. H.) Mfg. Co. is the first private employer in the Granite State to reach an agreement with Selective Service officials for orderly withdrawal from its employ of men within combat age limits, according to Brig. Gen. Charles F. Bowen, State director of selective service.

▼ ▼ ▼

Textile Markets Remain Largely Routine

Cotton goods buyers find most mills unwilling to sell beyond the end of the second quarter because of numerous uncertainties and nearby deliveries of any materials are relatively scarce. Trading boils down to a willingness on the part of the manufacturer to release goods, and, as prices are set by ceilings, the general proceeding is quite routine. Good priorities are required on most of this civilian business, and lack of clean-cut classifications makes the situation complicated. Probable concentration in the future on certain standardized constructions may add more flexibility to the market. So far only parts of the simplification program are mandatory.

Wool goods manufacturers adopted a conservative attitude toward future business following the negiotiations through February on the part of wool growers to obtain agreement on the part of the Government to purchase their clip. The proposal appears virtually accomplished. This move will probably mean an advance in the price of wool as the Government is believed about to raise the ceiling basis. The report published in these columns last month to the effect that civilian wool allotments would be doubled, was later confirmed by such action on the part of WPB, but the uncertain price situation still made it unwise for mills to take increased future business.

Rayon users are recognizing the increasing limitations placed on the free markets for rayon yarns as more and more of the primary rayon plants' output is diverted to military needs. After March, free yarn may not exceed 40% of the industry's production, and it is possible that after July it may recede to 20%. This affects all users since such people as the hosiery group have yarn allocated to them on a percentage basis, which means less poundage as the total available poundage declines. Buyers of rayon gray goods have specific wants, but they will take almost anything that is offered to them.

Hosiery distribution is proceeding to the limit of mills' present ability to produce. A preliminary estimate has been made by WPB as to the bedrock standards under which civilians might subsist and it is estimated by them that the essential quantity of hosiery is 71% of the 1939 production of half-hose and 69% of that year's production in all other hosiery items. This is based on a per capita consumption of fractionally more than nine stockings per year. The present British clothing budget is considerably below this, ranging from 4 to 7½.

Underwear is becoming scarcer as war needs continue large and available materials decline. The style simplification plan encourages each manufacturer to concentrate on a few styles for which he is best equipped, which should make a greater number of unit garments available for civilians. Whatever is done, heavy underwear will remain scarce to the point of inducing rationing. Fall business is being taken subject to delivery prices no higher than maximum to be set later by OPA.

Outerwear manufacturers are completing their fall showing. In general distributors have had an excellent year and are taking everything they can get for next summer and fall. A record bathing suit season is forecast for the summer.

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Puts your sales on a cash basis
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Relieves you of credit losses

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Fine Chemicals for the Textile Industry
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We invite your attention to our other products for the textile industry:

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NEWS ABOUT MEN

Charles A. Cannon, president of the Cannon Mills, Concord, N. C., received the honorary degree of Doctor of Laws from Presbysterian college, Clinton, S. C., March 7.

Robert E. Henry, Greenville, S. C., president of Dunean Mills and an official of other mills, has been named district chairman for South Carolina, one of the five States making up the Richmond region of the National Committee for Economic Development.

Joseph D. A. Whalen, president Boston Wire Stitcher Co., East Greenwich, R. I., has been appointed Rhode Island chairman of a committee on economic development headed by **Henry P. Kendall,** Boston, regional chairman. **John F. Tinsley,** president, Crompton & Knowles Loom Works, Worcester, Mass., has been named chairman for Massachusetts. Post-war problems will be considered.

Roger Milliken, New York, is the newly-elected president of Darlington (S. C.) Mfg. Co., succeeding the late Weldon F. Twitty. **W. S. Nicholson, Sr.,** has been reelected treasurer.

John S. Dickson, Toronto, has been appointed president of Harding Carpets Ltd., Brantford, Ont., to succeed Allan E. Cuthbertson who died recently. The new president has been a director and active in the financial affairs of the company since its establishment in 1928. **Charles V. Banks,** newly appointed general manager, has been sales manager and stylist of the company since it was founded. **Allan R. Darby,** superintendent, has been named works manager.

W. P. Hazelwood has been elected president and treasurer of Barbara Mills, Salisbury, N. C. **A. B. Hestwood, Jr.,** is vice-president, and **Homer V. Weaver,** assistant treasurer and local manager.

R. M. Adair, president and sales manager of January & Wood Co., Maysville, Ky., is now in Washington with a temporary and part-time assignment in the textile division of WPB in connection with the twine and cord industry.

Clifford B. Hayes, Lyman, S. C., vice-president in charge of southern operations of Pacific Mills, has been elected a member of the board of directors of the company.

Andrew E. Collins, a general manager of Empire Dyeing & Finishing Co., Paterson, N. J., has been elected treasurer of the company, and **Jacob Stam,** secretary and legal advisor, has been elected first vice-president.

W. Ray Bell has been reelected president of the Association of Cotton Textile Merchants of New York for the current year by the directors. **Saul F. Dribben,** of Cone Export & Commission Co., was continued as vice-president, and **Charles A. Sweet,** of Wellington Sears Co., as treasurer.

Alston H. Garside, cotton economist, who was recently appointed director of economic research of the National Cotton Council, of Memphis, Tenn., will make his office at 5444 Arlington Ave., New York, although spending the greater part of his time in Washington, D. C.

Bernard J. O'Reilly has succeeded **Tom Scott** as overseer of carding at the plant of Strong Hewat Co., North Adams, Mass. Mr. Scott is retiring after a career of 50 years in the woolen branch of the textile industry.

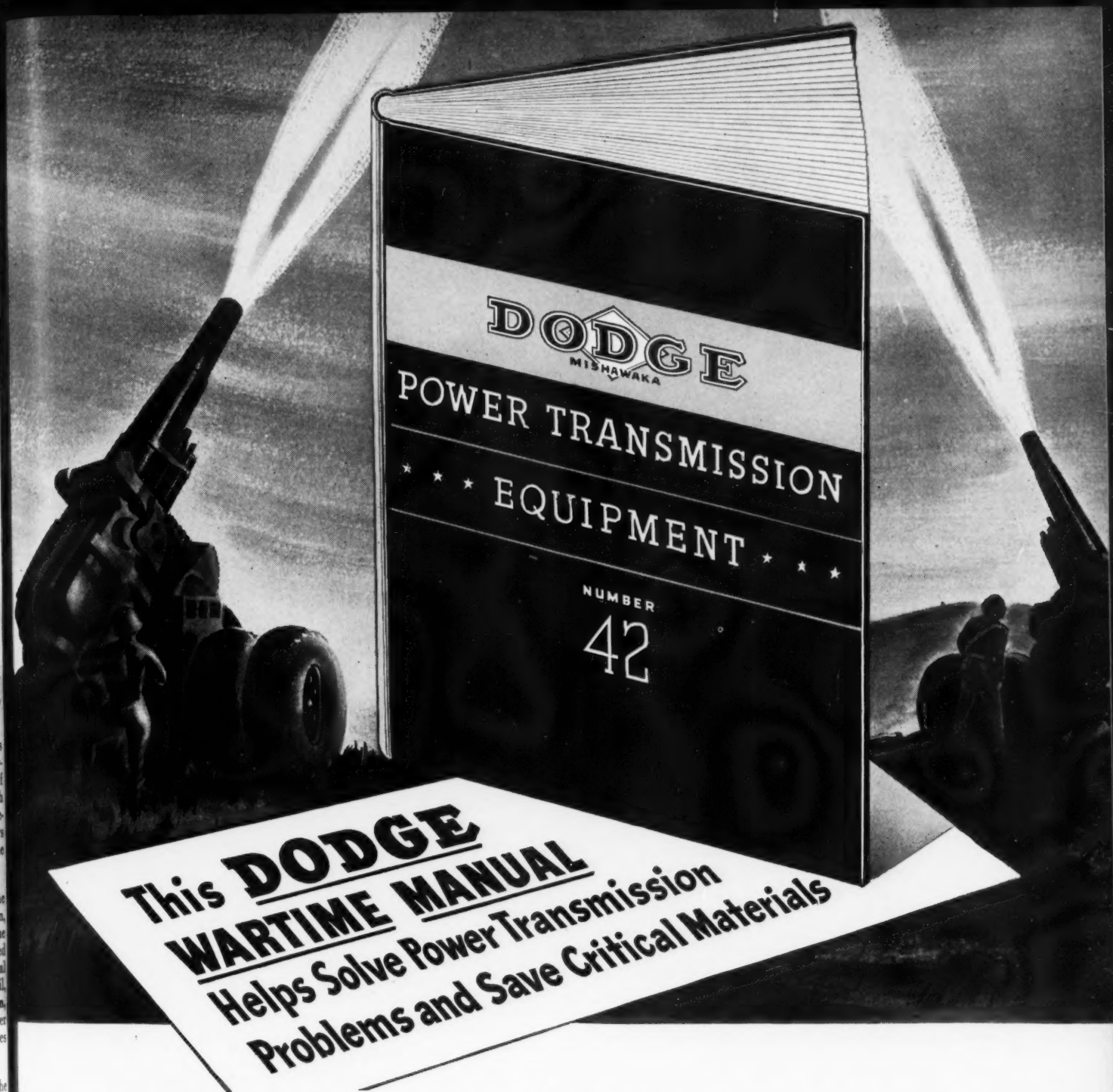
Ruth O'Brien, chief of the Textiles and Clothing Division, United States Bureau of Home Economics, has been elected vice-chairman of the National Consumer-Retailer Council, Inc. **Harold W. Brightman,** vice-president of L. Bamberger & Co., Newark, N. J., continues as chairman.

Preston F. Cox, head of the cost department, Lonsdale (R. I.) Co., and instructor in the Rhode Island School of Design, Providence, has been appointed assistant to general manager **Arthur D. Lund** of Esmond (R. I.) Mills.

Lawrence N. Hale, associated with Drayton Mills, Spartanburg, S. C., has joined the Paul Whitin Mfg. Co., Northbridge, Mass., in the capacity of manufacturing agent. He succeeds **A. J. Owler,** who is now with Verney-Brunswick Mills.

Comer Jennings, president of Cowikee Mills, Eufaula, Ala., has been appointed a lieutenant-colonel on the staff of Governor Chauncey Sparks of Alabama.

Robert Twitty has been elected vice-president and gen



This DODGE WARTIME MANUAL Helps Solve Power Transmission Problems and Save Critical Materials

THIS Dodge Wartime Manual of Mechanical Power Transmission has been compiled to assist in solving wartime power problems — to conserve power, increase production and save critical materials.

It is being released at a time when conservation of motors, power and critical materials is of vital importance. It is the "How Book" of the Dodge program aimed at helping industry to increase production — built around the fighting slogan — *"put all your power in the job."*

The new Dodge catalog offers alternate power transmission appliances that save critical metals — and help to throw more scrap into the fight. It presents power transmission equipment that steps up production — saves time — modernizes and increases productivity of present equipment — quickly — economically — effectively.

Between the covers of this new catalog, you will find "The Right Drive for Every Job" — Dodge D-V drives — bearings — pulleys — clutches and other power transmission appliances designed for use on individual, multi-motor and modern group drives.

Modern planned mechanical power transmission is a potent weapon ready *now* to wage war on power and material waste — to get more battle power out of horsepower.

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DODGE
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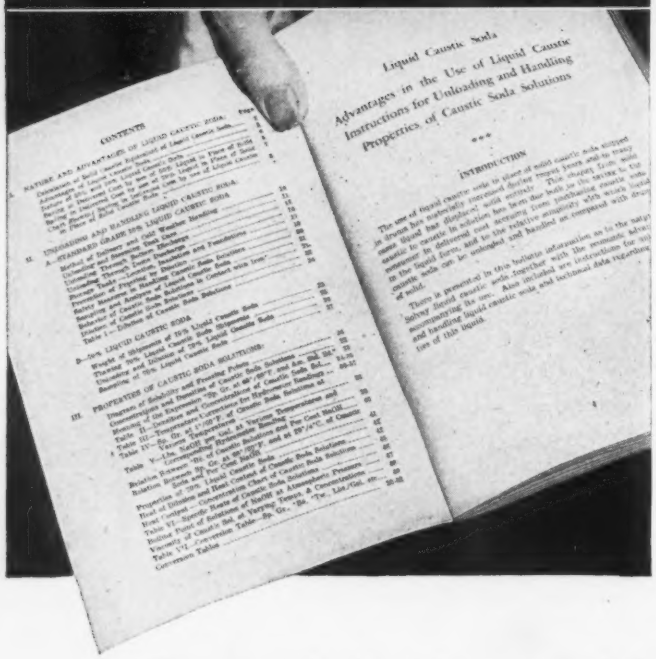
THE RIGHT DRIVE FOR EVERY JOB

PUT *ALL* YOUR POWER IN THE JOB

BOOK OF THE YEAR

...To The Man Who Needs Down-to-Earth Information On Handling Caustic Soda!


Liquid Caustic Soda
Advantages in the Use of Liquid Caustic
Instructions for Unloading and Handling
Properties of Caustic Soda Solutions
INTRODUCTION

If you are a technician or plant operator who is now "taking over" an assignment which necessitates a more specific knowledge of Caustic Soda than you previously required, *then write today for Solvay Technical Service Bulletin No. 6.*

This bulletin contains time-saving, factual information from which all sales talk has been eliminated. It is full of important tables, charts and other data on the handling of Caustic Soda. It is information which goes straight to the point . . . helps you improve efficiency, reduce man hours and increase production speed.

Solvay Technical Service Bulletin No. 6 on Liquid Caustic Soda is one of the series of Solvay Bulletins which are constantly being revised on the basis of new findings. For years this technical literature has had the recognition of plant operators, engineers and scholars who realize that such vital operations data concerning alkalies can only originate out of the breadth of accumulated experience Solvay has gained as America's oldest and largest manufacturer of alkalies.

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NEWS ABOUT MEN

eral manager of the Marion (N. C.) Mfg. Co.

Rodney Wilcox Jones, president of Augusta Knitting Corp., Utica, N. Y., was featured in the March issue of the *American Magazine* because of his interest in orchid culture. The title of the article, which was in the "Interesting People" section of the magazine, was "Mr. Jones and His $6,000 Bouquet." A colored photograph shows Mr. Jones' greenhouse, and the article further features his activities as head of the American Orchid Society.

Charles A. Moss has been appointed head of the yarn department of Delta Manhattan Co., New York. He has been in the cotton yarn and cotton goods business for the last 22 years and joined Delta Manhattan Co., last fall.

Hyman Rosen, recently with Roberts Textile Corp., New York, rayon converters, has been appointed senior commodity standards specialist with the Standards Division of OPA, Washington.

F. Higginson Cabot, recently director of the Commodities Bureau of WPB, has been appointed assistant deputy director to the director general for industry divisions. **Hugh Hughes** succeeds Mr. Cabot with Commodities Bureau.

Frank W. Orr has resigned as secretary of Marjane Weaving, Inc., Charlotte, N. C., and has been succeeded by **L. W. Brown.**

Hughston M. McBain, who has served as first vice-president of Marshall-Field & Co., for the last 2½ years, has been elected president of the company, succeeding **Frederic D. Curley,** resigned.

Ralph Vollmers has been appointed manager of sales of Virginia Maid Hosiery Mills, Pulaski, Va., and **William E. Owren,** assistant manager of sales, Virginia Maid mills on March 1 opened their own direct mill sales office at 2713 Empire State Building, New York. **Waldemar Wallner** is president of the company but he has withdrawn from Virginia Maid Sales Corp. and resigned as president of that organization.

Everett C. Atwell, formerly technical director of Newton Line Co., Inc., Homer, N. Y., has resigned to join the staff of Atlantic Rayon Co., and assume charge of the special products division, research and development laboratory of that company at Lowell, Mass.

S. L. Stack has become general manager of Winton Mills, Fort Valley, Ga., and G. & B. Yarn Mill, Cottondale, Ala. He was formerly superintendent of Father George Mill, Sanford, N. C.

Olin Dewitt Johnston, who at the age of 11 was a sweeper in the Chiquola Mill, Honea Path, S. C., began his second term as governor of South Carolina in the first week in February. After his early apprenticeship, he later worked in the Saxon Mills at Spartanburg while completing his high school course.

Charles L. Hayward, who for several years represented manufacturers of electrically-operated time-control equipment in the Hartford area, has joined the staff of the North Star Woolen Mills Co., Minneapolis, Minn.

Frank Chateauneuf, for the last two years with American Viscose Corp. in its Provi-

THE HOME OFFICE GROUP of the North Star Woolen Mill Co. sits for an informal portrait during the company's annual Sales Clinic in Minneapolis, Feb. 4 to 9. Left to right: Sam E. Hunt, purchasing agent; C. L. Hayward, engineer; Lawrence E. Hagenbarth, comptroller; W. G. Northup, president; Ray L. Lowell, chief engineer; Arthur L. Smith, director of research; H. L. Whitehouse, superintendent; Fred J. Johnston, wool buyer; Ward R. Hickok, vice president; William R. Reiser, cost accountant.

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ENGINEERS AND MANUFACTURERS
HOLYOKE, MASS.
THE LARGEST MANUFACTURERS OF ROLLS IN THE WORLD

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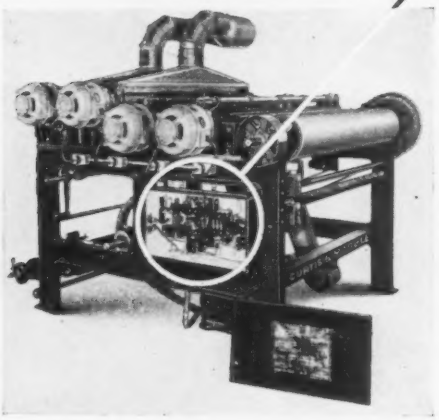

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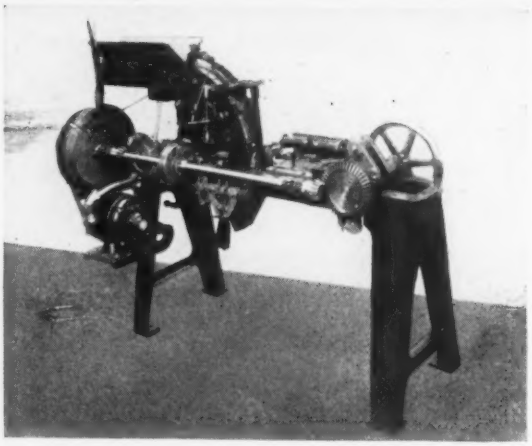

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Geo. Thomas & Co. . Manchester, England.—European Agt.

NEWS ABOUT MEN

dence, R. I. sales office, has been transferred to the company's development department at Marcus Hook, Pa. **Everton H. Loveless,** of the company's standards department at Marcus Hook, has been transferred to Providence to take over his work.

Harry A. Sharlip has been elected assistant treasurer of William Simpson Sons & Co., Philadelphia. He has been head of the accounting and credit department for many years. **Mrs. Anna M. McConeghy,** office and personnel manager, has been elected assistant secretary.

John McCarty, vice-president and general manager of the Cold Spring Bleachery, Pa., was tendered a dinner by the firm to mark his 40th year of continuous service with the company.

J. J. Granmaison headed the roll of honor at a banquet held recently in Nashua, N. H., for 30 employees of Nashua Mfg. Co. who had service records of 50 years or more. Mr. Granmaison holds the record of 61 years of unbroken employment. There were six other employees who had completed 55 years or more of service with the company.

James B. Hollas, of Scheuer & Co., New York, has been elected president of the New York Chapter of the New Bedford Textile School Alumni Association.

Chris Linder, employed in the drawing-in department of Hespeler, Ontario, plant of Dominion Woolens & Worsted, Ltd., celebrated his 80th birthday and completion of 62 years of continuous service with that company on Jan. 22. His department gave him a party and gifts.

Edward C. Russell last month completed 25 years of service with the New York sales office of the American Viscose Corp. and was awarded the company's 25-year service pin. He has the longest term of service of any man in the New York office.

C. A. Peterman, in charge of Iselin-Jefferson Co's. Atlanta, Ga., office, has recently moved the showroom to larger quarters in the Walton Building.

W. R. Miller has resigned as assistant Greenville (S. C.) County treasurer, to accept a responsible position with the Excelsior Mills, Union, S. C.

Miss Dorothy Clark has accepted the position of office secretary at the Joanna Textile Mills Co., Goldville, S. C. She was formerly a teacher in the schools at Abbeville, S. C.

Max C. Miller, knitting engineer, Cumberland, R. I., who, the U. S. District Court has ruled, holds a derivative citizenship through his mother who married an American in this country before Max Miller was 21 years old, has been released from detention as an enemy alien.

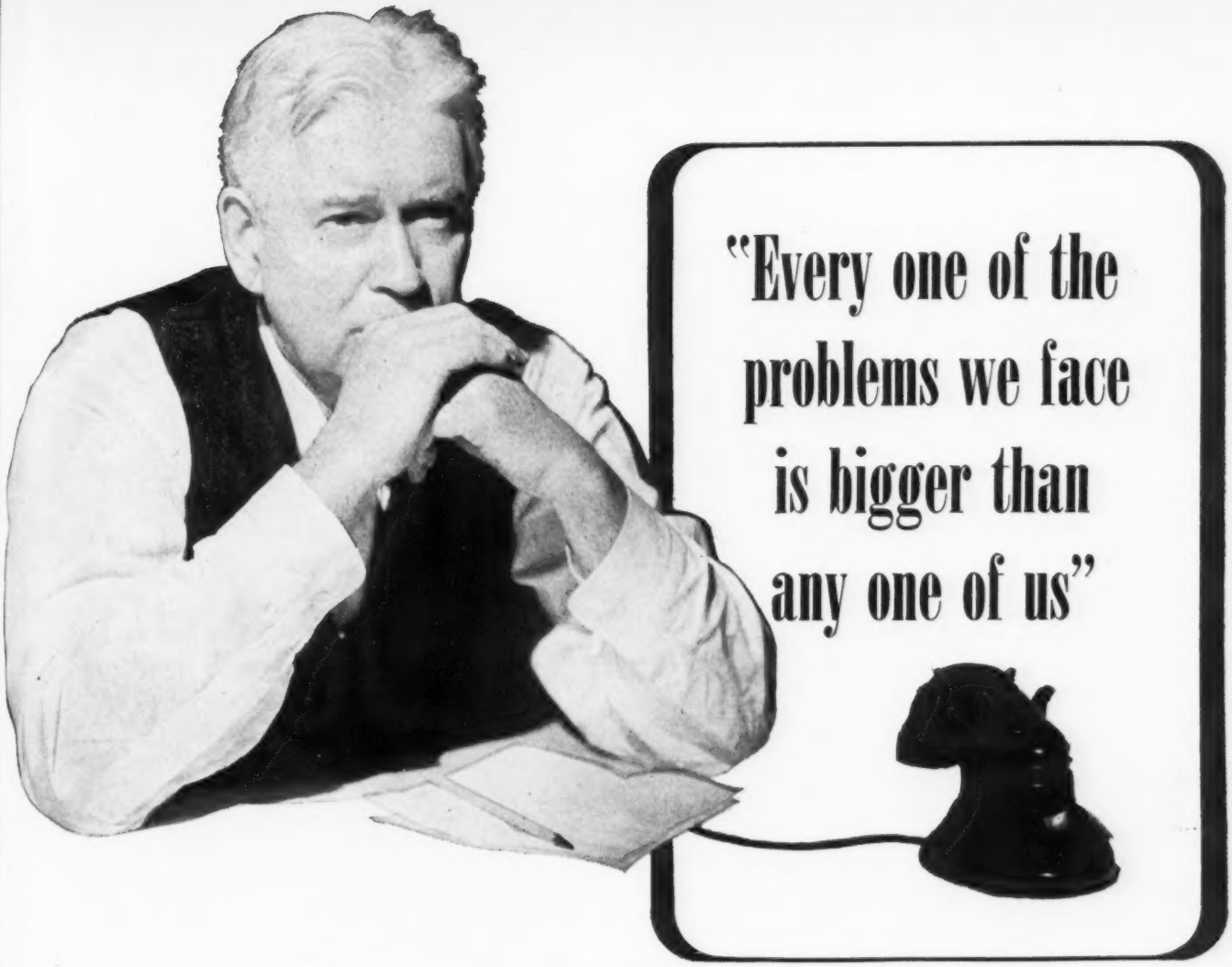
Therman L. Richie has become assistant superintendent of Travora Mfg. Co., Graham, N. C. He was formerly overseer of spinning at Parkdale Mills, Gastonia, N. C.

Ernest Mayo has resigned his position with Saco-Lowell Shops, Biddeford, Me., and has become superintendent of carding at Absorbent Cotton Mills, Inc., St. Louis, Mo.

John R. Hawkins has become assistant to the superintendent of carding at the Hickman unit of Graniteville (S. C.) Co. He was formerly of Greer, S. C.

Wm. Mellor, Jr., has resigned his position with Cowan

ATLANTA TEXTILE CLUB officers (left to right): Alan Clow, treasurer; J. Louie Lynch, secretary; William Hudson, vice-president; William Babcock, president. The next meeting is set for Apr. 5, at which Ellis Arnall, Governor of Georgia, is scheduled to speak.



If it is a problem in dyestuffs = = let us help . . . . we're as close to you as the 'phone at your elbow!

The ever-increasing requirements of our Government must be met . . . . this means that shortages and substitutions will be necessary for civilian work.

Perhaps we have been over the roads you are contemplating and can point out the way. Tell us your story . . . whether it is about specifications for war work, or color limitations for civilian work.

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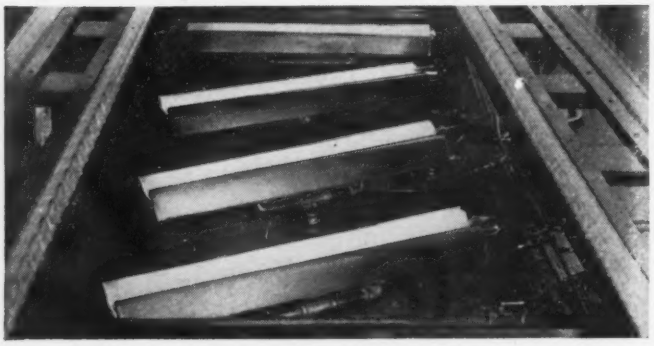
INFRA-RED DRYING
Speeds Production



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★ Dry fabrics *quicker.*
★ Have easily adjusted, *automatically controlled* temperatures from 150° to 2200° F.
★ Greatly improve the *quality* of the finished product.
★ Are *more economical* than any other drying method . . . save labor costs and space.

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Also H. W. Butterworth & Sons Co., Philadelphia, Pa.
Offices in Providence, R. I., and Charlotte, N. C.

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LONG BEACH, CALIFORNIA, 36 N. CLINTON, CHICAGO, ILL.

Mill, Lewiston, Me., and becomes assistant superintendent of Excelsior Mills, Union, S. C.

Henry E. Littlejohn is the new superintendent of S. Slater & Sons, Inc., Slater, S. C.

L. W. Green has become superintendent of Highland Park Mfg. Co., unit No. 3, Charlotte, N. C. He was formerly superintendent of Dora Yarn Mill Co., Cherryville, N. C.

Albert C. Phelps has been appointed personnel director of Brandon Corp., Greenville, S. C.

Donald Maddox has become superintendent of Ruby Cotton Mills, Inc., Gastonia, N. C., succeeding **W. H. Sanders,** resigned. He was formerly with American Thread Co., Bristol, Tenn.

C. E. Foster has resigned as superintendent of Parker Hosiery Mill, Hickory, N. C., to establish a mill of his own at Shelby, N. C.

W. S. Merritt, formerly with Richmond Hosiery Mill, Rossville, Ga., has become superintendent of spinning of Louisville (Ky.) Textiles, Inc.

Albert R. Tanner, formerly connected with Sibley Mfg. Co., Augusta, Ga., has accepted position of assistant superintendent of Bladenboro (N. C.) Cotton Mill, No. 1 unit.

T. S. Crow, formerly of Lexington, N. C., has become superintendent of the carding department of the Wade Mfg. Co., Wadesboro, N. C.

Textile Men in Armed Services

Capt. W. A. Best, U.S.N., has been appointed head of Clothing Division of Navy's Bureau of Supplies & Accounts, Washington, D. C. He succeeds Capt. Frank P. Delehanty, U.S.N., who headed that division for many years but has been transferred to other duty.

William K. McCampbell, with rank of second lieutenant, has joined the Procurement Division of Philadelphia QM Depot as assistant to the contracting officer for woolen garments. He is the son of Leavelle McCampbell and was until recently secretary of the Graniteville (S. C.) Co.

W. S. Pilgrim, has resigned as superintendent of printing, coloring and engraving at Rock Hill (S. C.) Finishing Co., to accept a commission as lieutenant in the Army.

William Frank Dohme, assistant to **William Hill** in the Lindale Division of Pepperell Mfg. Co., has received his commission as lieutenant (j.g.) U.S.N.R.

J. Watson Pedlow, assistand to the manufacturing manager of American Viscose Corp. at Wilmington, Del., has received a commission as lieutenant, (j.g.), U.S.N.R. He is reporting to the school at Quonset, R. I.

Charles W. Hanne, formerly lieutenant has been promoted to the rank of captain. He is located at the Utah Quartermaster Depot, Ogden, Utah, and is officer in charge of the Special Clothing and Equipage Unit which handles the administrative details in connection with mountain, winter warfare, arctic, amphibious, parachutists and protective equipment. He was at the Philadelphia QM Depot in civilian capacity from 1935 to April 1942 when he received his commission.

CAPT. C. W. HANNE

William Johnson, general manager of Charles B. Johnson Machine Works, Paterson, N. J., and son of Charles B. Johnson, is executive officer of Civil Air Squadron 221-5. He has been awarded a comqualifies him to fly with the mercial pilot's certificate which Ferry Command or Coastal Patrol.

R. V. Reece, who was with American Bemberg Corp. and North American Rayon Corp. at Elizabethton, Tenn., before joining the army, has been promoted to the rank of major.

William H. Parker, Jr., formerly of the shirting department of Riverside & Dan River

This SAFE LOW TITER SOAP Helps Guard Against

Costly Processing Errors!

Today's tight production schedules leave no room for processing mistakes. And that's one big reason why alert textile men are taking advantage of the safe, efficient processing results obtainable with Olate.

FOR SCOURING AND FULLING WOOLENS

Olate has the excellent lubricating properties so important in the safe scouring and fulling of woolens and worsteds. It has the detergency necessary for loosening the dirt and oil present in these fabrics. And the emulsifying qualities essential in maintaining impurities in suspension until they can be flushed thoroughly from the fibers.

Because of its low titer, Olate solutions are fluid. They provide thorough, even penetration of the cloth . . . help to guard against bare spots, uneven shrinkage, non-uniform fulling and poor felting. And Olate's free rinsing properties help produce clean, sweet-smelling goods.

FOR RAYONS AND ACETATES

Olate's gentle action is a valuable asset in scouring and dyeing fabrics made from rayons or acetates alone as well as fabrics which combine these man-made fibers with natural fibers. Here Olate helps guard against uneven shrinkage. It helps guard against streaks, dye blotches and chafe marks.

In many ways, Olate is proving to be an efficient "helper" in providing smooth, wartime production for countless mills. There's likely to be a spot in *your* mill where Olate can do its bit.

Procter & Gamble

Olate— *safe and efficient for every textile soap usage!*

MOISTURE CONTROL

Rapid

Accurate

with the

DIETERT

MOISTURE TELLER

RAW STOCK

COTTON

WOOL

SILK

RAYON

YARD GOODS

ETC.

Here's an inexpensive, practical moisture tester and control. Assures savings in processing time, reduces rejections, and improves product quality. Write for literature on Moisture testing by drying.

HARRY W. DIETERT CO.

9330 ROSELAWN DETROIT, MICH.

FIDELITY
UNIVERSAL RIBBERS
true rib
FOR PERMANENT ELASTICITY
SNUG FIT IN HOSIERY TOPS
Here is the machine to put permanent elasticity and snug fit into hosiery tops—at minimum expense. Every part and every motion of the FIDELITY Universal Ribber reduces cost. Dogless has no vibrating parts — avoids repairs and delays. Free vertical dial movement makes "picking up" easy.
To inspect an entire section of the dial, simply loosen one thumb screw. Loose course plate reduces needle breakage. Heads interchangeable without new dogless parts. Take-up gears entirely enclosed prevent oil spots and seconds. One-piece frame increases rigidity. FIDELITY Universal Ribber operates with less noise, vibration, attention. Write for detailed information and data.
FIDELITY
FIDELITY MACHINE COMPANY
3908-18 Frankford Ave., Philadelphia, Pa.

NEWS ABOUT MEN

Cotton Mills, Danville, Va., has been promoted to lieutenant.

Donald F. Horne, sales manager for Wamsutta Mills, New York, has been commissioned lieutenant - commander, U.S.N.R.

Joseph Klumpp, head of Joseph Klumpp Co., Philadelphia, and widely-known in the cotton yarn trade, has accepted a commission as lieutenant-colonel in the Army Quartermaster Corps.

"Chip" Chapin, Jr., formerly of Mooresville (N. C.) Cotton Mills has been graduated from an aviation technical training school at Amarillo Field, Tex.

John H. Vogel, of Meinhard, Greeff & Co., Inc., New York, has received his commission as lieutenant in the Army.

H. H. Dillard, vice-president of Baker-Cammack Hosiery Mills, Burlington, N. C., has been commissioned a captain in the Army Signal Corps. It is expected that he will be stationed temporarily at Fort Monmouth, N. J.

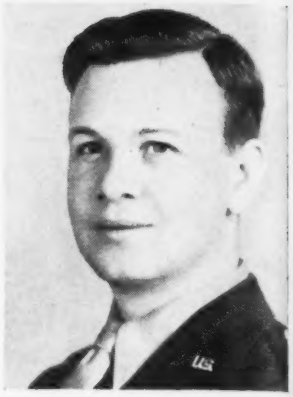
Nelson W. Pickering, with commission of captain in the Navy, was ordered to report for active duty on Feb. 1, and accordingly resigned as president of Farrel-Birmingham Co., Inc., Ansonia, Conn., and Buffalo, N. Y. Captain Pickering has been assigned to duty as Commander of U. S. Navy Section Base at New London and commander of local defense forces in that area. Before joining Farrel-Birmingham in 1919, Captain Pickering served for 15 years in the Navy. He was graduated from Annapolis in 1908.

Don S. Holt, vice-president of Travora Mfg. Co., Graham, N. C., is now serving as lieutenant in the U. S. Navy air forces in the Pacific war zone.

Edward A. Quintard, formerly an executive of Swift Mfg. Co., Columbus, Ga., now with the bomber force in the Pacific area, has been promoted to captain.

Dr. J. Watson Pedlow, assistant to the manufacturing manager of the American Viscose Corp. at Wilmington, Del., has received a commission as lieutenant (j.g) in the U.S.N.R.

Aaron A. Finkelstein, of Johnston, R. I., a former knitwear business executive, and now a member of the staff and faculty at the Quartermaster School, Camp Lee, Va., has been promoted to major in the Quartermaster Corps.



MAJ. CHAS. H. KING

Charles H. King, former assistant plant superintendent of Ware Shoals (S. C.) Mfg. Co., has just been promoted to the rank of major in the Army. He is officer in charge of the testing laboratory of the Philadelphia QM Depot.

Alfred J. Haselden, sales engineer for Norlander Machine Co., Gastonia, N. C., is now serving as an Army Air Corps aviation cadet, located at San Antonio, Tex.

Herbert Sandner, of William Iselin & Co., New York, reported for training in the Army at Fort Dix last month.

J. N. Murphy of the technical service force of Quaker Chemical Products Corp., Conshohocken, Pa., is now a member of the American armed forces.

Lieut. Aldine Thomason, Jr., Charlotte, N. C., graduated from the Textile School of the North Carolina State College, Raleigh, N. C., class of 1941, is now stationed somewhere in India with the U. S. Army Quartermaster Corps.

Heinz Markus, cost accountant with Threads, Inc., Gastonia, N. C., for eight years has resigned and volunteered for service in the Army Recruiting Station, Charlotte, N.C.

Nelson F. Batchelder, son of Nelson A. Batchelder, formerly manager of Empire Cotton Mills, Ltd., Welland, Ontario, has been commissioned an ensign in U.S.N.R. and is stationed at Boston. Young Mr. Batchelder is a graduate of Queens University. For the last few years he has been mechanical superintendent at the Empire Cotton Mills.

Morris L. Hirsh, general manager of Star Woolen Co., South Pittsburg, Tenn., has been called to active duty as a member of the naval reserve and has reported at Cornell University for training.

Wm. H. Moore, who was

Boom in war babies!

AMERICA's industrial birth rate is zooming, too. Spurred by war, such wonder children as synthetic rubber, plastics, dehydrated foods, air freighters, have emerged from blueprints and test tubes to reality.

The influence of victory's offspring is far reaching, fast growing. It means new methods and new processes in many different fields. To manufacturers meeting these changes, the technical assistance of the Wyandotte Chemicals Corporation can be of great value.

Wyandotte men are working with more than fifty different industries —expediting the handling of alkalies in textiles, caustic in explosives, chlorine in plastics. They are abreast of developments which . . . once seemingly remote . . . may now have a direct bearing on the "duration" uses and post-war prospects of your own products.

Whether your product is a "war baby" or is long established, the broad experience and research background of Wyandotte experts are freely offered. There is no obligation for their assistance.

• Wyandotte Chemicals Corporation consolidates the resources and facilities of Michigan Alkali Company and The J. B. Ford Company to better serve the nation's war and post-war needs.

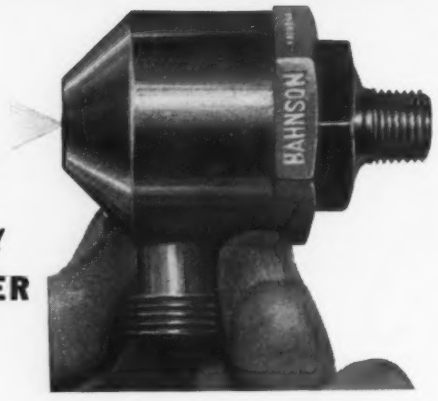
Wyandotte

OFFICES IN PRINCIPAL CITIES

WYANDOTTE CHEMICALS CORPORATION • MICHIGAN ALKALI DIVISION • WYANDOTTE, MICHIGAN

SODA ASH • CAUSTIC SODA • CHLORINE • BICARBONATE OF SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • DRY ICE

The Economizer



THE NEW
Bahnson
ATOMIZER

FLEXIBILITY • ECONOMY • SIMPLICITY

Flexibility of installation and capacity, economy of operation and simplicity of construction, are all combined in the new Bahnson Industrial Atomizer... a cold water humidifier —no steam to cause temperature irregularities.

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

PENETRANTS • DETERGENTS
REPELLENTS • SOFTENERS
FINISHES

BURK-SCHIER

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE

formerly assistant superintendent of Norwood (N. C.) Mfg. Co., is now serving in the U. S. Army, located at Camp Lee, Va. He entered the service as a private.

Eugene D. Cogburn, who has been associated with the Atlanta office of Riverside & Dan River Cotton Mills has reported to Miami, where he was inducted in the U. S. Army Air Corps.

Shirley Straus, printing department, and **Myra Young,** manager of the file department of American Viscose Corp., New York, have joined the WAACS. **Claire Whitmore** of the same company, has become a WAVE.

John Jacob Ours, member of an armed guard crew aboard a merchant vessel, has been commended by the United States Navy for outstanding service. Mr. Ours is a former employee of Celanese Corp. of America at Cumberland, Md. He spent 72 hours in a lifeboat after his ship was sunk but finally was landed in Russia.

B. P. Spann, for the last eight years advertising manager of the Gardner-Denver Co., Quincy, Ill., has been commissioned lieutenant, (j.g.), in the Supply Corps of the U. S. Naval Reserve, and is now stationed in Philadelphia.

Plato Durham, Gastonia, N. C., cotton broker, has been commissioned a lieutenant, (s.g.), U. S. Navy, and has been called for active duty.

Morris Katz, formerly vice-president of the Max Katz Bag Co., Indianapolis, Ind., has been commissioned a second lieutenant at Camp Lee, Va., with the Quartermaster Division.

Dick J. Tribble, night overseer of carding and spinning at Echota Cotton Mills, Calhoun, Ga., is now serving in the armed forces, and has been succeeded by **W. O. Price,** formerly of Clover, S. C.

G. L. Chapman, formerly superintendent of Barbara Mills, Inc., Salisbury, N. C., a position he relinquished to enter the Army with the rank of captain, has been ordered overseas.

Joe W. Richardson, superintendent of the bleachery of Russellville Mfg. Co., Alexander City, Ala., on leave for the duration, is a captain in the Army assigned in the production division of the Redstone Ordnance Plant, Huntsville, Ala.

William B. Fisher, for a number of years in the knitting department of Nolde & Horst Co., Reading, Pa., and now located at an army base in Hawaii, has just been promoted to sergeant and first cook.

P. N. Peeler, textile official of Kings Mountain, N. C., has entered the Army as a second lieutenant and is stationed at Fort McClellan, Ala.

Obituary

Marvin B. Smith, Jr., 36, president of Liberty (N. C.) Hosiery Mills, and former vice-president of Burlington Mills Co., died at Hollywood, Fla., recently where he had gone for convalescence.

Marshall A. Wight, 51, former owner of Ballou Thread Co., Providence, R. I., died at Warwick Neck, R. I., Mar. 6.

Samuel A. Eyre, formerly with McCallum Hosiery Co., Northampton, Mass., for 26 years, died recently.

Allen E. Cuthbertson, 53, president and general manager of Harding Carpets, Ltd., Brantford, Ont., died recently.

Edward Lyman Shaw, 67, president of United Elastic Corp., Easthampton, Mass. since 1927, died while on vacation in Florida last month. He practiced law in Northampton, Mass. for many years.

Oscar Newfang, 68, who until his retirement in 1935 was credit manager and assistant treasurer of Julius Forstmann & Co., Passaic, N. J., died Feb. 15.

Henry K. Myers, 54, representative at Los Angeles, Calif., of Colonial Mills, Crystal Springs Bleachery, and other fabric houses, died last month.

Fred Hodgson, 68, president and treasurer of Somersworth (N. H.) Textile Co., died Feb. 8. He was born in Bradford, England, and had lived in Worcester, Mass. for more than 30 years.

John W. Morehead, 76, for more than 25 years in charge of Superior Woolen Mills Co., Owensboro, Ky., died last month.

Arthur M. Spore, 85, president of American Crayon Co., Sandusky, Ohio, died recently. He joined the company in 18[illegible]

NEW THINGS *via* MODERN CHEMISTRY

are helping mightily to win VICTORY... SOONER!

PHIL-PRO-TEX is the new finish that makes canvas last longer... because it makes canvas not only water-proof and rot-resistant, but FLAME-Resistant as well.

When Victory is Won, this war-time experience will make available awnings and canopies of flame-retardant canvas . . . lasting hatch and life-boat coverings . . . long life and really protective tarpaulins and merchandising coverings.

PHIL-PRO-TEX finished canvas does not have a tendency to stiffen and crack in cold temperatures . . . nor to become gummy and sticky at high temperatures.

An informative booklet will be sent to those interested.

TRULY ANOTHER TRIUMPH FOR CHEMISTRY

★ ★ ★ ★ ★ ★ ★

On March Ninth, ARMY E NAVY *Nineteen Forty-Three*

THE MEN AND WOMEN OF THE PHILADELPHIA TEXTILE FINISHERS, INC. (the makers of PHIL-PRO-TEX) will receive the coveted Army-Navy "E" Award for outstanding achievement in the production of War Equipment. ★ This honor and recognition obviously belongs to each and every employee, executive . . . and to the cooperative suppliers of essential materials. ★ To this team credit is due.

★ ★ ★ ★ ★ ★ ★

PHILADELPHIA TEXTILE FINISHERS, Inc.

3701 NORTH BROAD STREET

PHILADELPHIA

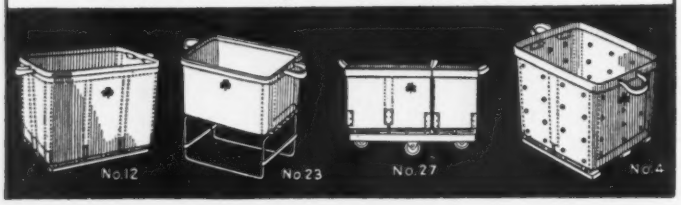
William L. Barrell Co., Selling Agent, 40 Worth Street, New York, N. Y.

SHAMROCK BASKETS & TRUCKS

for rough textile mill use

Extra sturdy Shamrock *Canvas* Baskets and Trucks have a battleship resistance against wear. They're light in weight, easy to handle and exceptionally low in price.

Write TODAY for Catalog **MEESE, INC.** MADISON, IND.



TEXTILE INDUSTRY RESEARCH

INCORPORATED

11 WEST 42ND STREET NEW YORK. N. Y.

CONSULTANTS ON TEXTILE MANUFACTURING AND DEVELOPING

SPECIALIZING IN

OPERATING METHODS. WORKING CONDITIONS. MAINTENANCE. WASTE CONTROL. NEW FIBRES AND PROCESSES

***Simplified* DESIGN**
***Flexible* POWER**
***Better* EVAPORATION**
***More sensitive* CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE

This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

was shortly afterward made secretary-treasurer, and held that joint office until he became president in 1938.

Charles Thomas Main, 87, head of Charles T. Main, Inc., Boston, died March 6 at his home in Winchester, Mass. He was a past-president of the A.S.M.E. and prominent for many years in the engineering field. He was employed by Manchester (N. H.) Mills in 1879 and joined Pacific Mills at Lawrence in 1881, working up to superintendent in 1887. He went into engineering in 1892. Among his largest projects are the Wood Worsted and Ayer Mills in Lawrence.

Herbert G. Beede, 72, president of Pantex Pressing Machine, Inc., Central Falls, R. I., died March 5. He was for some years with Fales & Jenks Machine Co., Pawtucket. He obtained over 50 patents on textile machinery and 20 on garment pressers.

Joseph Henderson, 55, a textile machinery salesman for Davis & Furber Machine Co., No. Andover, Mass., formerly superintendent of Beaver Brook Mills, Collinsville, Mass., and at one time agent of American Woolen Co., plant at So. Royalston, Mass., died Feb. 20.

Dr. James Newton Cheney, 76, cofounder of Rome (Ga.) Hosiery Mill and Berryton (Ga.) Mills, died at his home in Rome on Jan. 28.

John Walmsley, 47, production manager of Russell Mfg. Co., Middletown, Conn., died Feb. 17. A native of Paterson, N. J., he joined Russell Mfg. Co. in 1916.

John Liddle, 89, formerly one of the proprietors of the Tryon Knitting Mills, Amsterdam, N. Y., until his retirement 30 years ago, died recently.

Hill M. Hunter, former secretary and general manager of Proximity Mfg. Co., Greensboro, N. C., died Feb. 17.

Lawrence (Larry) Foyle, 50, well-known for many years to the textile industry as a representative of Proctor & Schwartz, Inc., Philadelphia, Pa., died Jan. 29, at the Abington Hospital.

Pincus Ressler, 54, assistant treasurer of Associated Textiles of Canada, Ltd., died recently. He came to Montreal, 11 years ago from his native city of New York.

Oscar Rumpel, 69, former general manager of Consolidated Felt Co., and founder of the Oscar Rumpel Felt Co., died recently at his home in Kitchener, Ont. He was coowner of one of Canada's first radio stations, opened 20 years ago.

Elton Clark, former Boston (Mass.) wool merchant, whose latest connection was with Payson, Clark & Co., died suddenly at Pomfret, Vt., Feb. 2. He was a graduate of Harvard College, class of 1906, and was a veteran of the Lafayette Escadrille, World War I.

Timothy J. Lynch, New England district manager of the Allis-Chalmers Mfg. Co., Boston, for over a quarter-century, died in that city on Feb. 2. He retired about three years ago, and was widely known in the textile engineering field in connection with electrical apparatus applications.

Felix S. Senton, 73, one of Mississippi's leading cotton factors and well known in textile circles, died at his home at Laurel, Miss., recently.

W. T. Brown, 70, for many years superintendent of weaving at Nokomis Mill, Lexington, N. C., died Jan. 31.

Ernest McClure, 52, for the last 15 years an accountant with Boston cotton brokerage firm of E. A. Shaw Co., died at Marblehead, Mass., Feb. 3.

Robert W. Cumming, 72, for many years superintendent of Clark Thread Co., Newark, N. J., died recently at his home in Marion, Mass.

Kinnie F. Harmon, 50, superintendent of twisting of Gastonia (N. C.) Combed Yarn Corp., died recently.

Mark Rodgers, 53, instructor in the woolen mill at Concord (Mass.) Reformatory for the last 12 years, died in a Boston hospital on Feb. 8. He was a native of Huddersfield, England.

Karle E. Stone, former superintendent of the old Amoskeag Mfg. Co., Manchester, N. H., is dead in that city.

Clifton Loring, 63, retired field supervisor for the Wayne Knitting Mills, Fort Wayne, Ind., died recently.

F. Perry Olmstead, formerly for 14 years superintendent and agent of the Devonshire Mills at Goffs Falls, near Manchester, N. H., is dead. He was a native of Athens, Pa., retired in 1927. At one time he was superintendent of American Woolen Co. plant in Enfield, N. H., and of Faulkner Mfg. Co., North Billerica, Mass.

Gus F. Roberts, 71, Winston-Salem, N. C., for many years a leading cotton mill superintendent in the South, died Jan. 14.

SALTY SAYS: "You eliminate spotting, streaking, and white edges with 100% saturated brine!"

"Here's the Lixator installed at Continental Mills, Inc., Philadelphia, Pa."

"WHY? Well, it's this simple. Brine disperses *evenly* throughout the vat . . . there are no undissolved crystals to ruin the dye-lot when you use *100%* saturated brine.

"And there's no difficulty in getting 100% saturated brine—every time—when you install a Lixator. It's produced *automatically*. Important, too, is the fact that the Lixator uses no stirring devices—either power or manually operated.

"Thus the Lixator helps cut your production and maintenance costs . . . requires no power or constant repair-man supervision! Furthermore, the Lixator cuts costs by using 10% to 20% *less* salt—utilizes inexpensive Sterling Rock Salt!

"But what about installation? Does it cost a young fortune? No sir! There's no investment in machinery required. You merely lease the Lixator for a very nominal annual sum!

"Into the bargain, the Lixator will not only help you to achieve level dyeing . . . it will give you *perfect* zeolite water softener regeneration also. Would you like to get *all* the facts? Send for the booklet below!"

"IT'S FREE!"

"Let me send you this 36-page, fully-illustrated booklet on the Lixate Process for making brine. It gives you all the facts—installations, brine tables, diagrams, formulas. Just write for *your* copy, today!"

The LIXATE Process

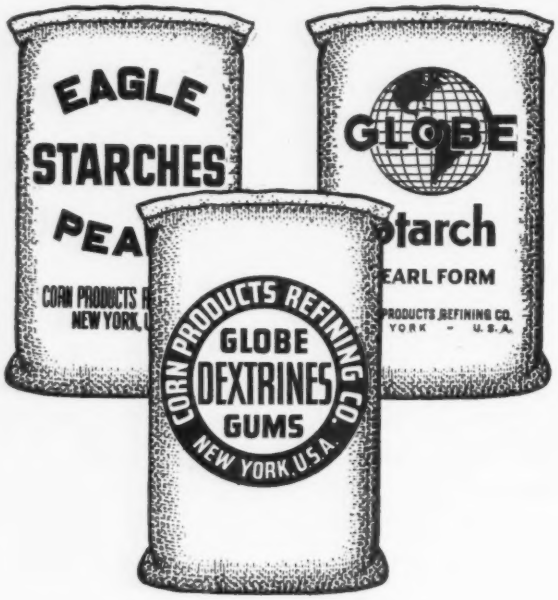
Reg. U. S. Pat. Off.

for making brine

INTERNATIONAL SALT COMPANY, INC., DEPT. T-3, SCRANTON, PENNSYLVANIA

FOR
CLEANLINESS
UNIFORMITY
and SERVICE
USE

Corn Products Warp Sizing
AND
Finishing Starches



The uniformity, cleanliness and consistent high quality of Corn Products starches and gums are well-known to leading textile manufacturers. The technicians of Corn Products are always glad to help the manufacturer with Warp Sizing, finishing or other textile problems.

CORN PRODUCTS SALES COMPANY
17 Battery Place, New York, N. Y.

Textile Offices:

Greenville, S. C.	Greensboro, N. C.	Atlanta, Ga.
Spartanburg, S. C.	Birmingham, Ala.	Boston, Mass.

TEXTILE MILL NEWS

Cotton Mill News

Convenience, Inc., Greenville, S. C., plans construction of a $30,000 two-story addition to the plant at River & Hammond Streets. Contract has been awarded to Henry B. McKoy Co., of Greenville. This company is manufacturing surgical dressings for the armed forces.

Cooperman - Schoenhaus, Inc., South Norwalk, Conn., has been chartered with capital of $50,000, to operate a local mill for the manufacture of drapery and tapestry materials. Nathan Weinstein, Flushing, L. I., N. Y., is one of the incorporators.

Empire Cotton Mills, Ltd., Welland, Ont., have plans under way for new one-story addition, reported to cost over $60,000, with equipment. It is proposed to begin work soon.

Judson Mills, Greenville, S. C., have sold to Gaylord Container Corp., for $80,000, the northeast corner of Gordon Street and Eighth Ave., and the buildings and improvements on the land, formerly occupied by Judson Mills, No. 2 unit.

McComb, Miss.—A cotton mill may be established in the building in McComb which formerly housed the Van Dyke Knitting Mill, if a labor survey being conducted by the Sanders interests indicates that it is feasible.

Leedon Webbing Co., 363 Barton St., Pawtucket, R. I., has filed notice of organization, to operate a mill in this vicinity. Company is headed by John and Edward Janowski, Central Falls, R. I.

Pacific Mills, Lyman (S.C.) Division, have work under way on installation of a new filtration plant at local mill, for which general contract recently was awarded to C. M. Guest & Sons, Anderson, S. C. It is estimated to cost approximately $130,000. Wiedeman & Singleton, Atlanta, Ga., are consulting engineers.

Pisgah Mills, Inc., Brevard, N. C., has completed installation of a skein mercerizing plant and expects to have the machinery soon in full production.

Rhyne-Houser Mfg. Co., Cherryville, N. C., has completed a one-story community house for mill operatives, costing $15,000, and will place in service at once.

Southern Mills Corp., Oxford, Ala., suffered damage to the amount of $15,000 when a tornado struck the plant recently.

Whitener Spinning Mills, Lincolnton, N. C., is the reorganized Rudisill Spinning Co., and will engage in the manufacture of combed and carded yarns. Authorized capital stock is 400 shares with 150 shares subscribed. The incorporators are: Howard R. Whitener, of Lincolnton; Joseph Busch, of Brooklyn, N. Y., and Sam Bayer, of Far Rockaway, L. I., N. Y.

Wool Mill News

Almira Woolen Mills, Ltd., Stouffville, Ont., are planning early rebuilding of portion of mill, recently damaged by fire, with loss reported close to $30,000, including equipment.

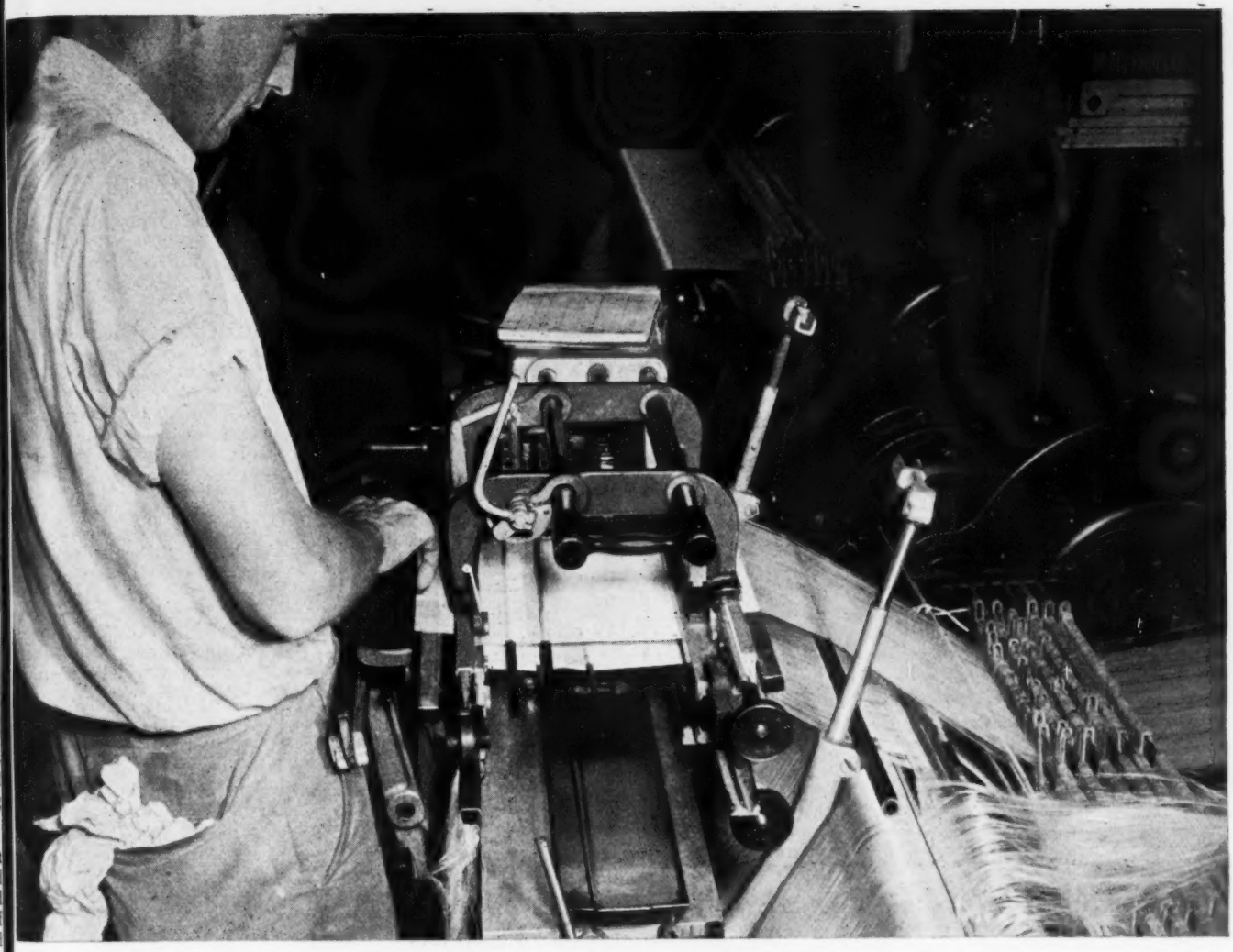
American Hair & Felt Co., Newark, N. J., has leased industrial property at 80 and 90-96 Lister Ave., consisting of two one-story buildings, and will occupy for warehouse service. Structures approximate 80,000 sq. ft. of floor space.

Pacific Mills, Worsted Division, Lawrence, Mass., have arranged to use central station service as part of power supply for plant, and have contracted with Lawrence Gas & Electric Co., for immediate installation and line connection. Company will discontinue operations in part of power plant at mill.

Shawmut Woolen Mills, Stoughton, Mass., has begun erection of a two-story addition, about 30 x 70 ft., and will carry out work by day labor. Arthur Rosenstein, Boston, Mass., is architect.

Wytheville (Va.) Woolen Mills were destroyed by fire of undetermined origin Feb. 14. R. L. Pierce, president of the concern, estimated the damage at $150,000. The flames were discovered by a railroad employee in the boiler room on the west side of the structure.

Wanskuck Co., Providence, R. I., has work under way on one-story addition to mill, formed by enclosing space between two existing buildings on Branch Ave. Construction is being carried out by day labor.



Tie-In New Warp AT THE LOOM

WHEN the warp beam on a loom runs out, it must be replenished with a full beam, and the ends connected together uniformly and accurately. The most practical and economical way to do this is with a Barber-Colman Portable Warp Tying Machine, which is shown in action in the picture above. This machine is light in weight, can be easily wheeled from loom to loom, and is compactly designed to work directly in back of the loom in space as narrow as a 12" alley. The actual tying is manually accomplished by simply turning a crank. Accurate mechanical controls produce a straight line of uniform knots and eliminate any possibility of dropped ends. These machines, in several models for different kinds of yarn, are in steady use in mills all over the world, producing top quality work and reducing warp replenishment time to a minimum.

BARBER-COLMAN
Portable
WARP TYING
MACHINE

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY
ROCKFORD, ILLINOIS, U. S. A.
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RYERSON CERTIFIED STEELS

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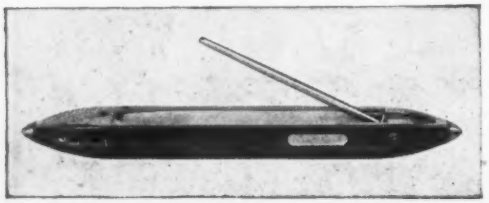

A NEW GIRT HAS BEEN ADDED TO THE ONE PIECE GUIDE AND CATCH

This girt, a new development for Watson-Williams rayon shuttles, stops the spindle from raising too high and thus prevents the top of the shuttle from splitting. It also holds the spindle level.

WATSON-WILLIAMS MFG. CO.

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SOUTHERN OFFICE: W. F. Daboll, 810 Woodside Bldg., Greenville, S. C.
NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester, Mass.

Rayon & Silk Mill News

Burlington Mills Corp., Greensboro, N. C., plans construction of an addition to the office, which will represent a cost of $4,750.

Celanese Corp. of America, Cumberland, Md., in conjunction with United States Industrial Alcohol Co., is completing construction of a $500,000 pilot plant on the property of Celanese Corp. for production of butadiene used in manufacture of synthetic rubber. The company has had 25 machinists transferred from its plant to the ordnance plant at the same town. This is the initial negotiated group transfer of skilled operatives from one large plant to another in that area.

Industrial Rayon Corp., Cleveland, Ohio, has begun a new one-story and two-story addition to mill, about 120 x 180 ft., and 36 x 43 ft., respectively, for which general contract recently was let to George A. Rutherford Co., reported to cost in excess of $115,000.

Fawcett Mills, New Bedford, Mass., have been incorporated for $100,000. It will take over the plant formerly known as the Burgoyne Silk Mills. Property consists of 120 looms and auxiliary machinery running on rayon taffetas and lining fabrics. Plant is located in part of the old Fairhaven Mills. William Fawcett is operating the plant. He is clerk and treasurer of the new corporation. He was previously with Arkwright Mills in Fall River and has held executive jobs with other mills in the vicinity. M. Pinheiro is president of the company.

Mack Kahn, of New York, president of Flexees, Inc., and owner of the controlling interest in three companies now operating in the Amoskeag Yard in Manchester, N. H., has announced an increase from $250,000 to $1,000,000 in the capital of Amoskeag-Lawrence Mills, Inc., and a boost from $50,000 to $100,000 in the capital of Manchester Knitted Fashions, Inc. The third concern is Amory Worsted, Inc.

Knitting Mill News

Atlantic Knitting Co., 385 Charles St., Providence, R. I., has filed notice of company organization to operate a local mill. Company is headed by Joseph M. Finklestein.

Capital Mills, Inc., Waterford, N. Y., have closed down, because of difficulty in operation under wartime restrictions.

Chestertown (Md.) Hosiery Mills are discontinuing operations under that name. The company will be dissolved at early date.

Concordia Silk Hosiery Co., Philadelphia, has taken over the assets and liabilities of Diana Knitting Mills, and moved its offices to the Diana plant.

Globe Knitting Works, Inc., Grand Rapids, Mich., have acquired a number of machines and auxiliary equipment formerly at mill of Amazon Knitting Co., Muskegon, Mich., now in liquidation, and will use for expansion.

Interstate Hosiery Mills has sold its former plant in Bloomfield, N. J., to the H. & F. Co., New York. Building is at present occupied by Johnson & Johnson, under long-term lease.

Lebanon Knitting Mills, Inc., Pawtucket, R. I., have work under way on one-story addition to boiler house at mill,

Net earnings for 1942 recently reported by Textile Mills

	Net Profit after Taxes, etc.	
	period ending in 1942	period ending in 1941
Phoenix Hosiery Co., Milwaukee, Wis	$469,864	.....
Industrial Rayon Corp., Cleveland	2,006,363	$2,311,711
Riverside & Dan River Cotton Mills, Danville, Va.	1,543,014	1,458,041
Bigelow-Sanford Carpet Co., New York	1,254,184	2,044,304
Durham Hosiery Mills	295,820	549,629
Soule Mill, New Bedford	244,202	200,217
Dwight Mfg. Co., Boston (Nov. 30)	509,419	575,750
Gotham Hosiery Co., New York	822,894	737,834
Southern Weaving Co., Greenville	113,712	.....
Newmarket Mfg. Co., Boston	282,318	359,718
Cleveland (Ohio) Worsted Mills Co.	758,513	1,079,717
Gosnold Mills, New Bedford	282,261	288,544
Boott Mills, Lowell	201,732	128,393
Bruck Silk Mills, Montreal	186,489	267,568
Franklin (Mass.) Yarn Co.	33,959	915
McCampbell & Co., New York	221,381	303,471
Worumbo Mfg. Co., Lisbon Falls (Nov. 30)	238,937	172,807
Belding Heminway Co., New York	640,332	598,633
William Whitman Co., Boston	474,904	1,182,099
Powdrell & Alexander, Inc., Danielson, Conn	293,905	306,262
Sidney Blumenthal & Co., New York	1,250,208	834,086

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SCOTT TESTERS

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for which general contract recently was awarded to Soule Construction Co., Pawtucket.

Pen Argyl (Pa.) Silk Co. property has been sold to the Easton (Pa.) National Bank as trustee for the bondholders. At present the property is occupied by other firms.

Ripon (Wis.) Knitting Works have plans for alterations and improvements in three-story mill, and will place work under way at early date. No estimate of cost announced. Auler, Jensen & Brown, ERA Bldg., Oshkosh, Wis., are architects.

Roseman Knitwear, Inc., New York, N. Y., care of Turchin & Brown, 270 Broadway, attorneys and representatives, has been organized to operate a local knitting mill.

Terry Hosiery Mills, Inc., High Point, N. C., has been purchased by Spinks Hosiery Mill, Dallas, Ga., and machinery formerly owned by the Spinks plant has been moved to High Point and consolidated with the equipment there, increasing production of children's and misses' anklets.

Wilkes Hosiery Mills Co., North Wilkesboro, N. C., Feb. 1, opened a clubhouse for the exclusive use of women employees of the company.

Processing Plant News

Atlantic Dye Works, Paterson, N. J., has been appointed a finisher licensee under the American Viscose Corp.'s "Crown" Tested Plan, to dye and finish rayon fabrics in accordance with the "Crown" Tested minimum requirements. Similar licenses have been given to **Fairlawn** (N. J.) **Finishing Co.,** and to **Glenlyon Print Works,** Phillipsdale, R. I., and to **Farwell Bleachery,** Lawrence, Mass.

Enterprise Dye Works, Inc., Woonsocket, R. I., will construct a one-story plant, 25 x 40 ft., on Fairmount street this spring. Work was previously started but has been held up. Brien Bldg. Co., Inc., Woonsocket, has the contract.

Hanes Dye & Finishing Co., Winston-Salem, N. C., purchased the North State Bonded Warehouse, on Northwest Boulevard, near its plant from the Chatham Mfg. Co. The new owners will use it for storage purposes.

Newport Finishing Corp., Fall River, Mass., recently reorganized, is again operating.

Phoenix Dye Works, Chicago, Ill., have plans maturing for one and two-story addition to mill on Southport Ave., reported to cost close to $55,000, with equipment. William J. Ryan, 43 East Ohio St., Chicago, is architect.

Western Shade Cloth Co., Chicago, Ill., has work under way on new one-story addition, for which general contract recently was awarded to H. F. Friestelt Co., Chicago, and will use for general operating service. E. P. Lewin, Chicago, is architect.

Miscellaneous Mill News

Barbour Flax Spinning Co., Paterson, N. J., sustained a fire loss at mill recently.

Commodity Credit Corp., Washington, D. C., Federal agency, is completing plans for a number of new hemp-processing mills in Illinois, and will take bids soon on general contract. Each will consist of a main one-story mill and several auxiliary structures, reported to cost over $125,000, with equipment. Sites have been selected in vicinity of Earlville, Shabbona, Kirkland, Sandwich and Ladd. The CCC has let general contract to Mason & Hanger Co., Lexington, Ky., for new hemp-processing mill in vicinity of Winchester, Ky., comprising several one-story buildings and boiler house, reported to cost over $100,000, with equipment. The CCC also has plans under way for new one-story hemp-processing mill, in vicinity of Warren, Ind., with boiler house and auxiliary structures, estimated to cost about $125,000. The CCC has abandoned plans for proposed hemp-processing mills at Clinton and Walworth, Wis., previously announced.

Parisian Chic Embroidery Co., 305 35th St., Union City, N. J., has purchased a three-story industrial building on local site at 415-19 35th St., and will occupy for expansion in machine embroidery works. Present mill will be removed to new location and additional equipment provided.

Piedmont Bagging Co.'s yarn mill, Anderson, S. C., is a newly organized mill which began operations in February.

Raybestos Division of Raybestos-Manhattan, Inc., has awarded contract to Otto F. Burghart, Inc., Bridgeport, Conn., for construction of one-story storage unit 50 x 100 ft. at 75 East Main Street, Stratford, Conn.

A DIFFERENT WAR? YES!

. . . and a different war presents new and difficult problems.

Uncle Sam's fighting men in the jungle, in the Arctic, on the desert - - all over the world - - are demanding fabrics finished to meet the extreme conditions of this *new* kind of war. ● Arkansas' vast peacetime experience is now solving wartime problems . . producing for textile processing and finishing plants products that meet exacting government specifications.

FRONT LINE PRODUCTS

FUNGICIDE G For mildewproofing all types of cotton cloth used in sleeping bags, webbing, tentage, mosquito netting, etc.

ARKO FIRE RETARDANT For flame-proofing uniform cloth, tentage, felts, etc.

CULOFIX L* For preventing color-bleed in water of direct dyed cotton.

AQUAROL* Produces a water-repellent finish on uniform cloth, overcoatings, and other military fabrics . . used in a single bath treatment with Fungicide G to impart water-repellency and mildew resistance . . used in a single bath treatment with Arko Fire Retardant to produce water-repellency and fire-resistance.

*REG. U.S. PAT. OFF.

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It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

A penny postcard will do—but please indicate your *old* and *new* address, and any new company connection or position.

TEXTILE WORLD
330 West 42 Street New York, N. Y.

SUPPLIERS' NEWS

(*Continued from page* 102)

Tennessee Eastman Corp., New York, has appointed F. L. Bume as New York sales representative for its acetate dyestuffs. Mr. Bume (better known as Bob Bume) has been in the dyestuffs industry since 1914 and has had wide experience in the manufacture, sale, and technical application of dyestuffs. His offices are located at 10 East 40th Street, New York. Tennessee-Eastman's dyestuffs are for application to acetate rayon and Nylon. The company is conducting research to develop improved dyes for acetate rayon, with particular emphasis on colors with better fastness properties. Already commercially developed, though restricted because of war demands, is Eastman's process for the discharge printing of acetate fabrics. Eastman's Eastone Blue BB is a chemically new type of color with unusual resistance to gas or atmospheric fading; it is also one of the few acetate blues which may be discharge printed.

Albert Kahn Associated Architects & Engineers, Inc., Detroit, Mich., have elected Louis Kahn, for many years secretary-treasurer and executive head of the corporation, as president, succeeding late Albert Kahn.

Philco Corp., Philadelphia, has appointed William MacMurtrie as assistant general purchasing agent. Mr. MacMurtrie became connected with the corporation in 1935.

American Engineering Co., Philadelphia, Pa., manufacturers of Hale-Shaw "Fluid Power" pumps has appointed the American Equipment Co., Detroit, Mich., as representatives in Michigan.

Wartime Packaging Conference & Exposition will be held at the Astor Hotel, New York, April 13 to 16. Reports received from exhibitors by the American Management Association, sponsor of the conference and exposition, indicate that exhibits will be concerned exclusively with presentation of products and services for war and for essential civilian needs.

Commercial Investment Trust Corp., New York, reports combined net earnings for 1942, after taxes and customary reserves, of $14,405,982 compared with $17,324,310 in 1941. The earnings as reported were also after reduction of $1,000,000 as a special reserve for post-war expansion in the instalment financing field. There was a decline in volume of financing due to reduced sales of automobiles and other heavy goods in 1942. Total volume was $779,409,788 as compared with the all-time high of $1,638,679,148 in 1941.

Keystone Carbon Co., Saint Marys, Pa., has appointed George B. Shaw as sales engineer to promote Keystone negative temperature coefficient resistance material which is a recent development of the company.

Treesdale Laboratories, Inc., Pittsburgh, Pa., have contracted for additional drying cans to supplement equipment at their laboratory in Mars, Pa.

R-S Products Corp., Wayne Junction, Philadelphia, has elected David W. Hopkins, secretary and director for a number of years, to be vice-president. He will continue in charge of the company's valve division.

Crocker-Wheeler Electric Mfg. Co., Ampere, N. J., has appointed W. L. Buchanan as field manager of renewal parts sales, with headquarters in the Chicago office.

There's SELECTIVITY in Ahcopel

MILITARY USES FOR AHCOPEL

Uniforms

Shelter Tents

Camouflages

Webbing

Sleeping Bags

Parachute Cords

You're not limited to one type in motor cars, clothing or many other things you buy. Why then should you be limited to one type in a water repellent, particularly when the conditions under which it is used are far from constant?

Recognizing this fact, we offer a number of different types of Ahcopel for different purposes, and you may select the type best suited to your requirements and your pocketbook.

We can supply a type which will:—

1. Meet government specifications as to water repellency.
2. Meet government specifications as to mildew resistance.
3. Provide a high degree of resistance to spots and stains.
4. Leave the fabric porous.

Ahcopels can be applied by single bath method in dye jig, padder, quetch, or jig.

For additional information, write

ARNOLD, HOFFMAN & CO., INC.

Established 1815 • Plant at Dighton, Mass.

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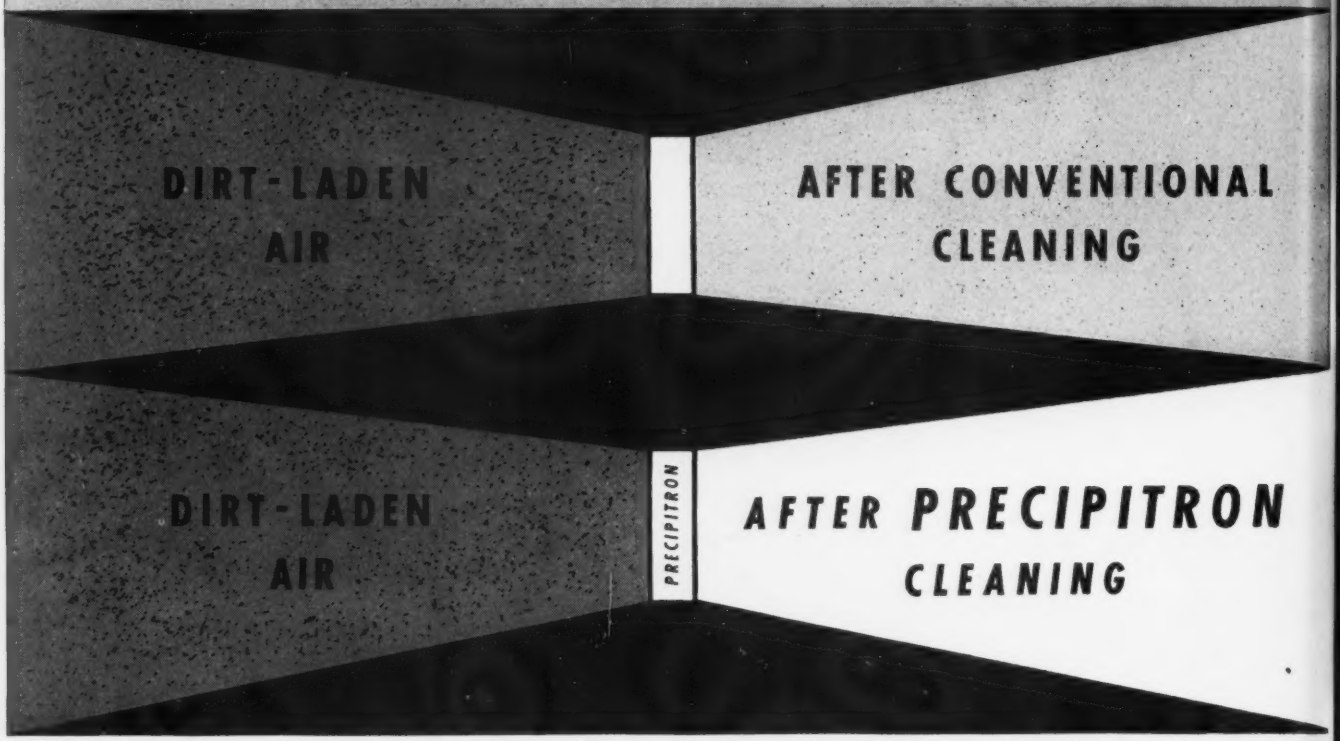
HERE'S THE BIG DIFFERENCE BETWEEN *PRECIPITRON** AND CONVENTIONAL AIR CLEANERS



It removes the *dirt you don't see*, too... 90% of *all* particles down to 1/250,000 of an inch

For every sizable speck of soot or dirt in the air there are literally thousands of smaller particles entirely invisible to the naked eye. These small particles are elusive fellows—less than 25% being "captured" by conventional air cleaning methods. And they can be a menace, too—particularly in industrial operations where clean air is a prime essential.

Precipitron, because it operates on an entirely different principle, removes 90% of *all* particles including those small as 1/250,000 of an inch. Dust, haze, and even tobacco smoke, disappear as if by magic.

The Precipitron is a simple device with no more moving parts than a storage battery. Hidden away in a ventilating duct, this Westinghouse electric air cleaner operates silently and efficiently. As each particle in the air stream passes through the Precipitron it is given an electric charge and then drawn off to oppositely charged plates. Since there are no filters to become clogged, resistance to air flow is negligible.

Today, Precipitron is enlisted 100% in the country's service. Its job is that of supplying electric air cleaning as an aid in speeding America's war production. For full information, write Westinghouse Electric & Mfg. Co., Edgewater Park, Cleveland, Ohio. *Plants in 25 cities, offices everywhere.*

*Trade-mark registered in U. S. A.

Westinghouse

Precipitron

Serves 3 Masters equally well!

First shift . . . Second . . . Right through three shifts, day after day, WOOD'S equipped drives are rolling up production records. Yet, despite the severe strains of continuous operation, WOOD'S equipment shows a life expectancy that will take it all through the war and far beyond!

That's the way WOOD'S products are built: To last!

Skillfully engineered, they have *more* than needed strength. Fabricated from tested metals, they must measure up to an 86-year-old standard of Quality, rigidly maintained.

WOOD'S products and service are available through a distributor conveniently located. Consult him. Get that steady flow of power, every production hour!

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Bearings, Collars, Clutches, Couplings, Contactors, Hangers, Pillow Blocks, Pulleys, V-Belt Sheaves and Complete Drives.

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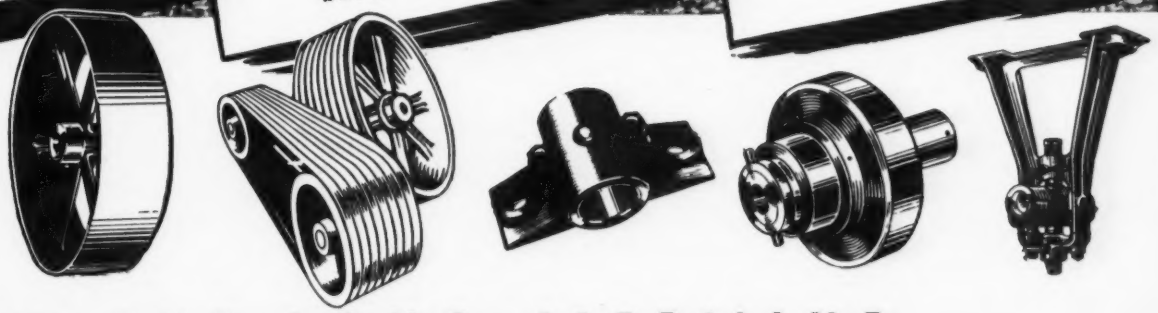
Machinery builders who are now making their own pulleys, pillow blocks, sheaves, bearings and other similar parts can release men and machines for other vital production by letting Wood's handle this part of the problem.

WOOD'S PLANNED POWER TRANSMISSION INCREASES PRODUCTION

because speeds are more uniform, the maximum speed being likewise the average.

Invest for VICTORY Buy U.S. WAR BONDS



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Pat'd. and Patents Pending

Knurling of socket screws originated with "Unbrako" years ago.

"UNBRAKO" WELT-BAR SCREWS

Uniformly strong and accurate, "UNBRAKO" Welt Bar Screws insure extra satisfaction in many a mill. Ask for samples of these too.

SELF-LOCKING HOLLOW SET SCREWS

with the KNURLED points

Yes, sir! When you install "Unbrako" Self-Lockers on your looms and other machinery where there is vibration, you remove one cause of machine breakdowns. When tightened like ordinary set screws, their knurled points dig in and hold tight . . . keep gears, pulleys, sprockets and cams from working loose. That means fewer machine shutdowns . . . less maintenance . . . more and better quality goods produced.

Yet, "Unbrako" Self-Lockers can be removed easily with a wrench and used over and over again. Why not give your machinery this inexpensive protection? Order a supply today from your mill supply house or direct. But insist on getting "Unbrako" Self-Lockers—the only set screws with knurled points.

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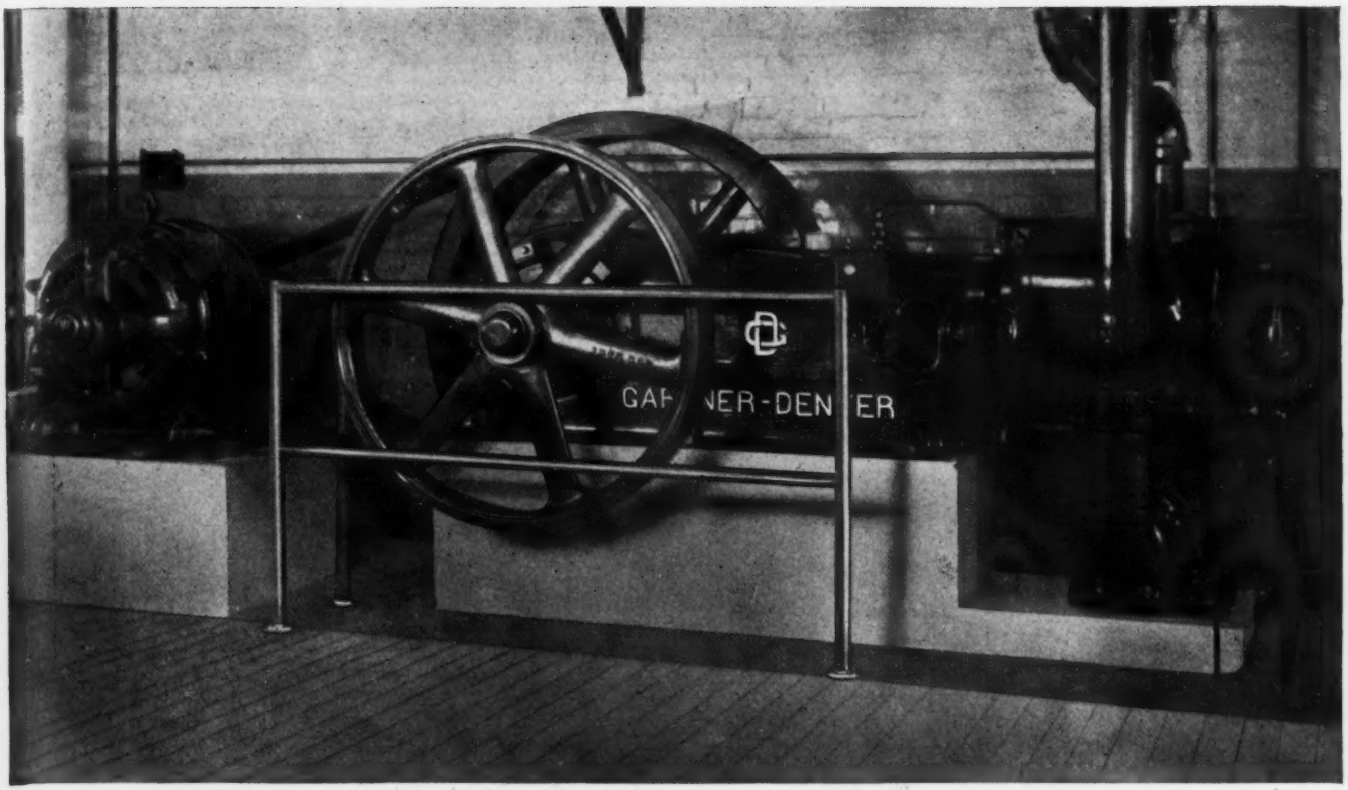
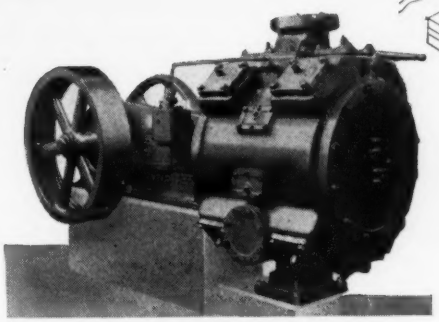


Is There an "RX" Speeding Your Job?



Gardner-Denver "RX" Dry Vacuum Pumps are built for heavy duty, continuous service in lint cleaning, cotton carding and other uses. Furnished in either single-stage or two-stage models, these pumps may be designed to produce high vacua above 18 inches Hg when required.

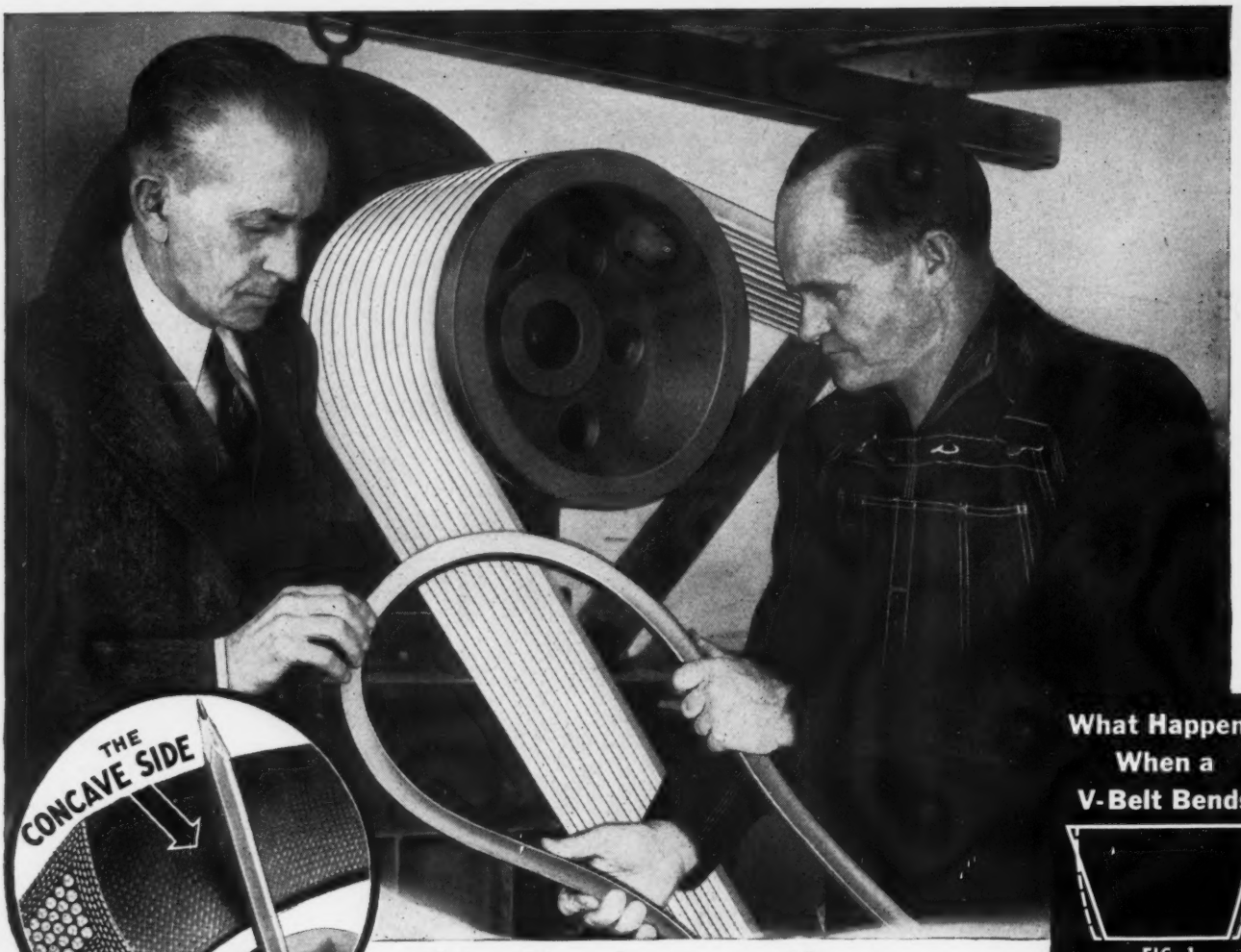
IF YOUR mill is equipped with a Gardner-Denver "RX" Single-Stage Horizontal Air Compressor —you know what it is to have truly dependable air capacity throughout shift after shift.

If your plans call for increased compressed air capacity after the war—then you'll want to note these additional advantages of the "RX":

1. Electro-pneumatic control that automatically fits air output to air needs.
2. "Air-cushioned" Duo-Plate valves that are quiet, durable and efficient, actually becoming tighter with use.
3. Cooler discharge temperatures assured by extra large water jacket areas. Rugged dirt-free construction keeps dirt and grit out of the power end—shuts in oil.
4. Capacities range from 89 to 1292 cubic feet displacement per minute.

For further information, write Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER *Since 1859*



What Happens When a V-Belt Bends

FIG. 1

FIG. 2

This Simple Test Shows the *Importance* of the CONCAVE SIDE!

432

You can see for yourself why belts built with the Concave side should be used in *your* plant if you will just pick up any straight-sided V-Belt and bend it as it bends in going around its pulley. As the belt bends, grip its sides as shown in the large photograph above. You will feel those sides *change shape*. The top of the belt, being under tension, narrows. The bottom, under compression, widens. The sides bulge out—as shown in Figure 1 (above, right).

Now bend a V-Belt that is built with the patented Concave side. The same shape-change takes place—but it merely *straightens* the precisely engineered Concave side, as shown in Figure 2. This belt, when bent, exactly fits its sheave groove. Two savings result. FIRST:—there is no out-bulge—therefore the entire side of the belt wears evenly and this means *longer life*. SECOND:—The entire side of the belt uniformly grips the sheave-groove wall. This carries heavier loads without slippage—a saving in belts for you, a saving in rubber for the nation.

Only belts built by Gates are built with the Concave side, a Gates patent.

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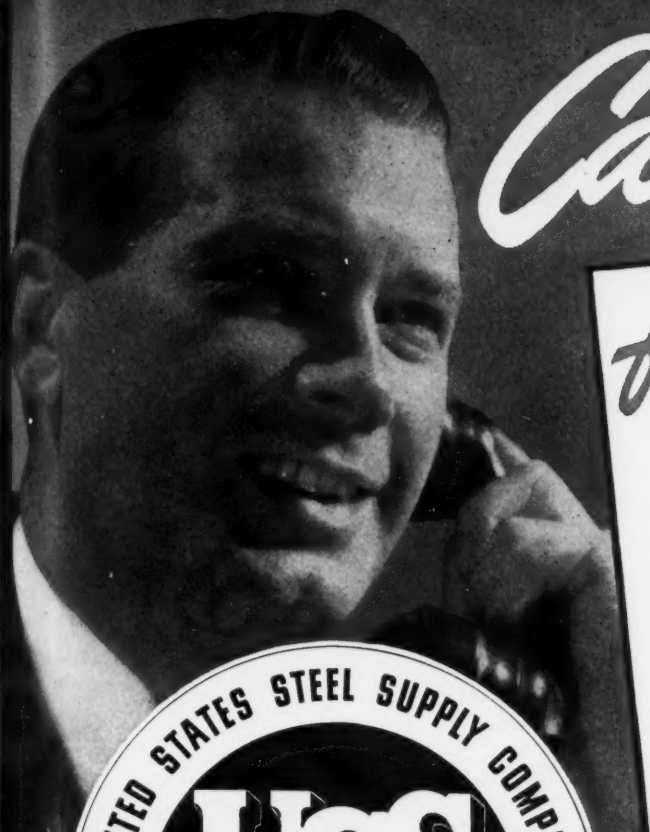

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Like yours, our first job is to speed war production. So, if your production on a war job is in danger of being slowed down for want of some piece of steel—call our nearest warehouse. Many such calls have kept wheels turning.

Although our stocks are not what we wish they were, what we have can be yours—in a hurry—subject, of course, to priority restrictions.

If we don't have what you need, we'll do everything we can to help you find a source of supply. So try us—note our phone and teletype numbers below, at the left.

for NATIONAL EMERGENCY ALLOY STEELS

These new alloy steels were developed as substitutes for the old style alloy steels to save critical materials such as nickel and chromium. They cover a wide range of properties—were especially designed to meet present conditions. In fact, many "NE" steels are actually out-performing the steels previously used.

We welcome your inquiries and will gladly assist you in determining the grades best suited to your needs. Telephone, write or wire the warehouse nearest you.

for AIRPLANE MATERIALS

Our Chicago Warehouse has been designated by the War Production Board as a warehouse to distribute the following aircraft products:

WD-X-4130 Sheets, *Open Hearth, Normalized, Pickled and Oiled to Spec. AN-QQ-S-685, Condition N. All gauges .016 to .50 sheets 18 x 72".*

Stainless Steel Rounds, *Spec. AN-QQ-S-771.*

Stainless Sheets—*Spec. AN-QQ-S-772. Spec. AN-QQ-S-757.*

These materials are for use in airplanes only and available only to the aircraft industry and sub-contractors. If you are eligible for these materials, phone, write or wire: United States Steel Supply Company, P. O. Box MM, Chicago, Ill. Telephone, BRUnswick 2000—Teletype CG. 605.

UNITED STATES STEEL SUPPLY COMPANY

USS STEELS

SERVICE

CHICAGO		**BRUnswick 2000**
	Teletype CG. 605	
BALTIMORE		**GILmore 3100**
BOSTON		**STAdium 9400**
	Teletype BRTN. 10	
CLEVELAND		**HEnderson 5750**
	Teletype CV. 153	
PITTSBURGH		**CEdar 7780**
	Teletype PG. 475	
ST. LOUIS		**MAin 5235**
TWIN CITY - St. Paul, Minn.		**NEstor 2821**
	Teletype STP. 154	
NEWARK, N.J.		**BIgelow 3-5920**
BErgen 3-1614 -		**REctor 2-6560**
	Teletype NK. 74	

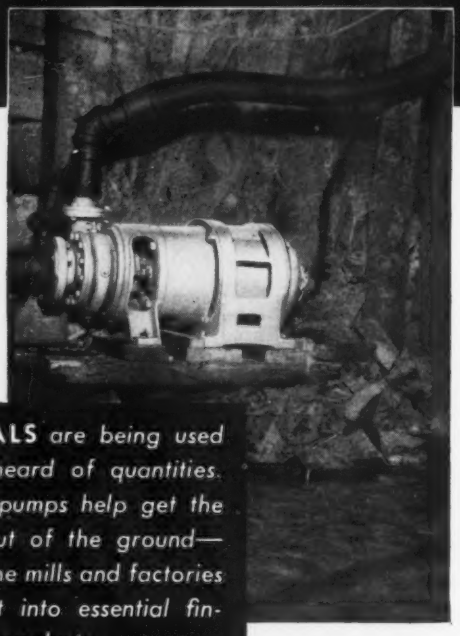
UNITED STATES STEEL SUPPLY COMPANY

(formerly Scully Steel Products Company)

UNITED STATES STEEL

For 24-Hour-A-Day Pumping Service *Select the*

MOTORPUMP

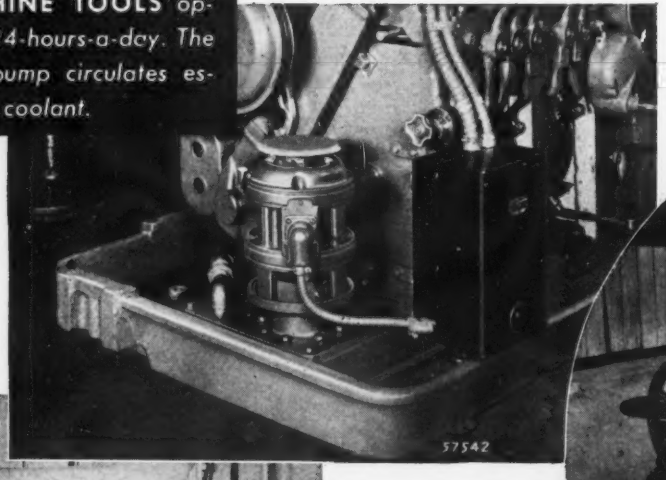


METALS *are being used in unheard of quantities. Motorpumps help get the ore out of the ground—help the mills and factories turn it into essential finished products.*

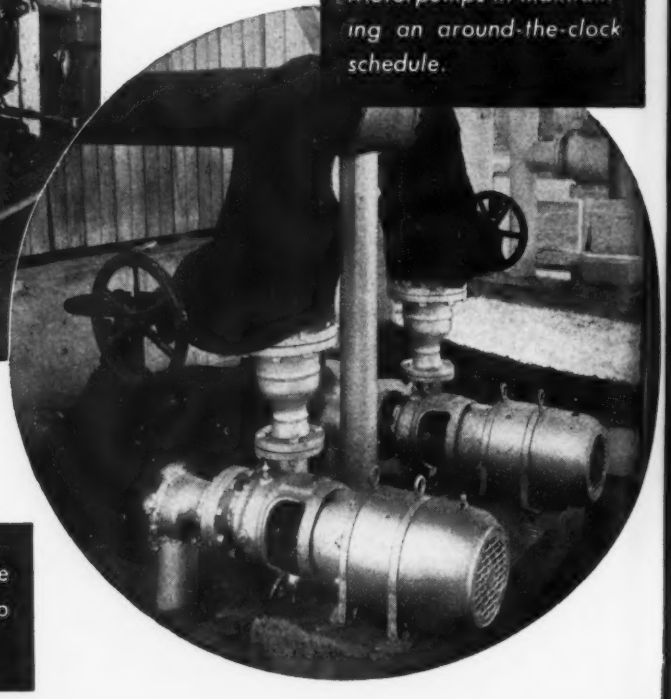
The Motorpump shaft is extra-heavy—its bearings are oversize—pump and driver are a single unit on the same shaft—the stuffing-box is deep and carefully designed. Furthermore, the Motorpump is highly efficient and unusually compact.

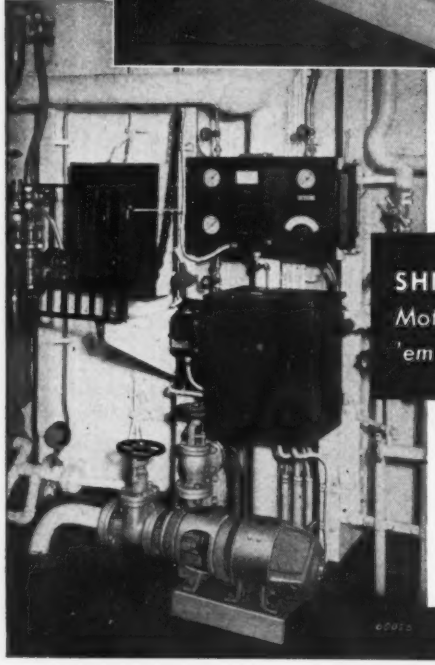
It is available in sizes to handle from 5 to 1800 gals per min at pressures up to 215 lb per sq in. Thousands of them are being used in essential production processes to bring water, gasoline, oil and a multitude of other liquids to the right place at the right time.

MACHINE TOOLS *operate 24-hours-a-day. The Motorpump circulates essential coolant.*



REFINERIES *depend on Motorpumps in maintaining an around-the-clock schedule.*





SHIPS *are vital. The Motorpump helps to keep 'em sailing*

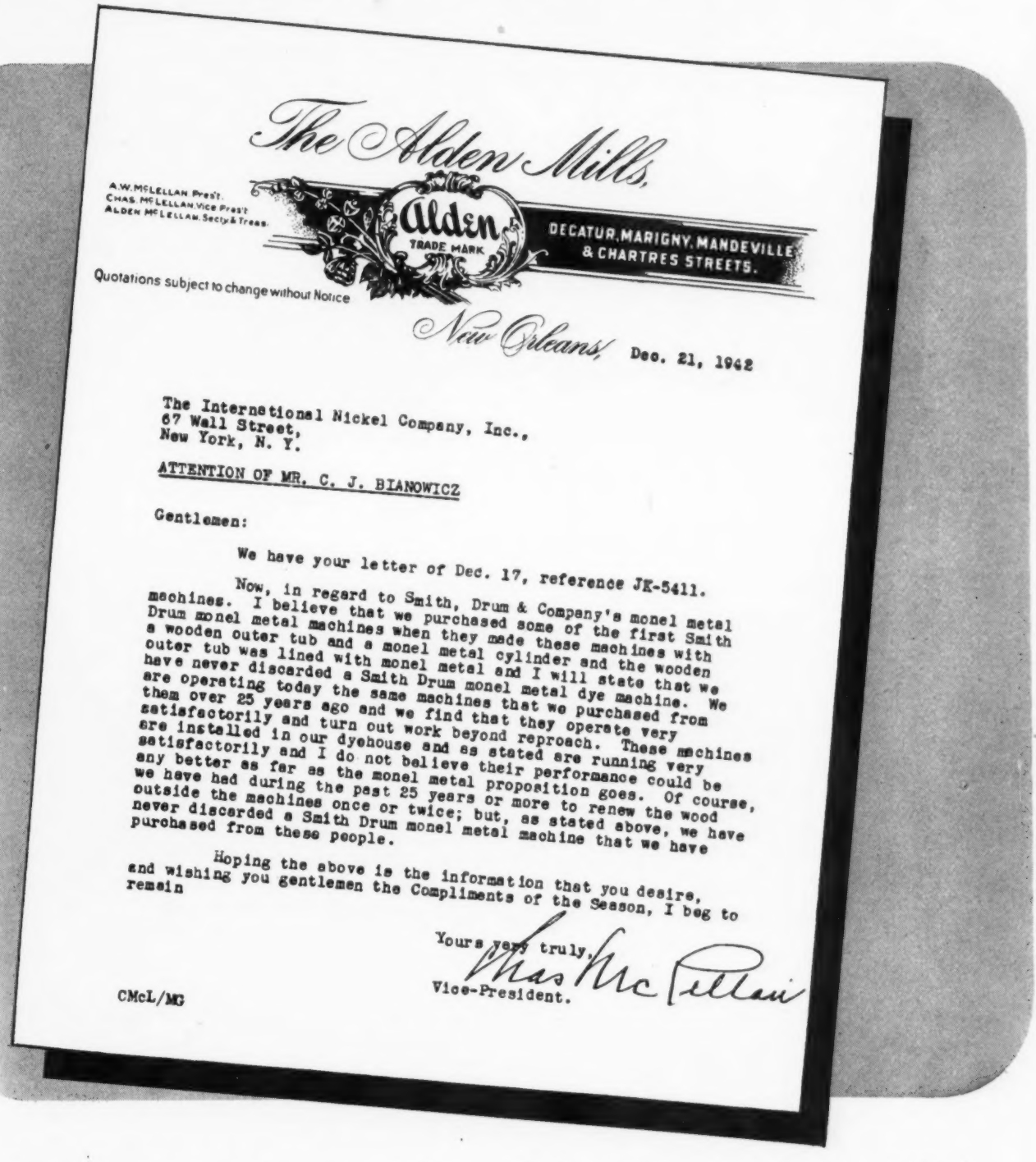
Ingersoll-Rand

CAMERON PUMP DIVISION

11 Broadway • New York, N.Y.

9-201

Monel equipment from World War I maintains production peak for World War II



The Alden Mills

A. W. McLELLAN, Pres't.
CHAS. McLELLAN, Vice Pres't
ALDEN McLELLAN, Secty & Treas.

Alden
TRADE MARK

DECATUR, MARIGNY, MANDEVILLE & CHARTRES STREETS.

Quotations subject to change without Notice

New Orleans, Dec. 21, 1942

The International Nickel Company, Inc.,
67 Wall Street,
New York, N. Y.

ATTENTION OF MR. C. J. BIANOWICZ

Gentlemen:

We have your letter of Dec. 17, reference JK-5411.

Now, in regard to Smith, Drum & Company's monel metal machines. I believe that we purchased some of the first Smith Drum monel metal machines when they made these machines with a wooden outer tub and a monel metal cylinder and the wooden outer tub was lined with monel metal and I will state that we have never discarded a Smith Drum monel metal dye machine. We are operating today the same machines that we purchased from them over 25 years ago and we find that they operate very satisfactorily and turn out work beyond reproach. These machines are installed in our dyehouse and as stated are running very satisfactorily and I do not believe their performance could be any better as far as the monel metal proposition goes. Of course, we have had during the past 25 years or more to renew the wood outside the machines once or twice; but, as stated above, we have never discarded a Smith Drum monel metal machine that we have purchased from these people.

Hoping the above is the information that you desire, and wishing you gentlemen the Compliments of the Season, I beg to remain

Yours very truly,
Chas McLellan
Vice-President.

CMcL/MG

Users of Monel textile equipment have little to worry about when it comes to repairs.

The above letter tells why.

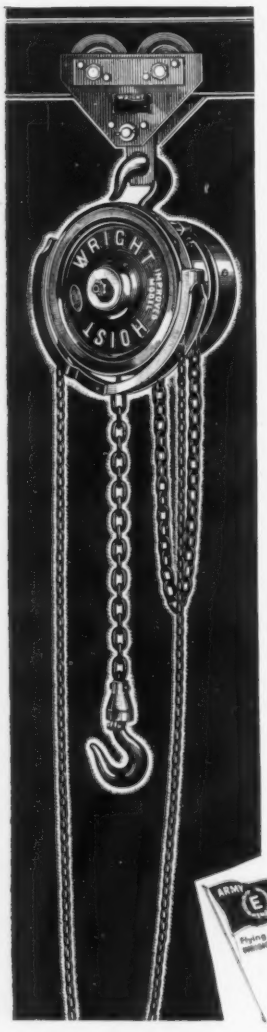
This proved durability of Monel is more important than ever now that it is so difficult to obtain repair parts. Significant, too, is the savings in replacement metal which is being used in other service.

Peak production schedules are maintained with Monel equipment, because there is little or no down time.

At present, the entire output of this durable, corrosion-resistant metal is going to our armed forces. After the war, Monel will again be available to those who demand the best in textile equipment.

☆ THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y. ☆

INSPECT REGULARLY!



Don't neglect your **WRIGHT HOISTS.** Make them last longer by regular and proper maintenance. Here are a few suggestions:

Put the grease gun to work! A **WRIGHT HOIST** needs thorough lubrication once a month. Keep the load chain well lubricated, too.

Don't overload your hoist. While **WRIGHTS** are famous for their ability to stand abuse, this is no time to abuse machinery. Overloading results in a stretched chain which cannot seat itself properly in sheave pockets, thus accelerating wear.

Watch the load hook. WRIGHT hooks, drop-forged from special steel, give visible warning of overloading by slowly opening. Don't continue to use hooks that have stretched.

Inspect your hoists regularly. Remember: where properly maintained, **WRIGHT HOISTS** have given continuous, trouble-free service for 20 to 25 years.

In Business for Your Safety

WRIGHT MANUFACTURING DIVISION

York, Pa., Chicago, San Francisco New York

AMERICAN CHAIN & CABLE COMPANY, INC.

BRIDGEPORT, CONNECTICUT

HERE'S A HELPING HAND FOR VICTORY

When busy, this hand builds bombers ...but a hot spark might make it idle

GLOVES, APRONS, COVERALLS—all protective garments worn by workers in our war industries can be made "flameproof" with Du Pont Fire Retardants. It's a new safety measure which manufacturers are rapidly adopting . . . it's a new source of business for you!

From Du Pont's laboratories come a group of proven Fire Retardants. Best known of all is Du Pont Fire Retardant "CM". It gives complete protection against spread of flame or afterglow. No stiffening of fabric or efflorescence results from its use. Currently available for the most essential war uses on allocation.

Fire Retardant "T" gives complete "flameproofing." It is recommended where slight stiffening action and efflorescence are not objectionable. Available on priority for most war and civilian applications.

Other Du Pont Fire Retardants "3 WG" and ammonium sulfamate are recommended for special applications.

Du Pont's easy-to-use Fire Retardants flameproof all fabrics. (Except acetate type rayon.) They have a minimum effect on textile strength and do not change the color of most dyestuffs.

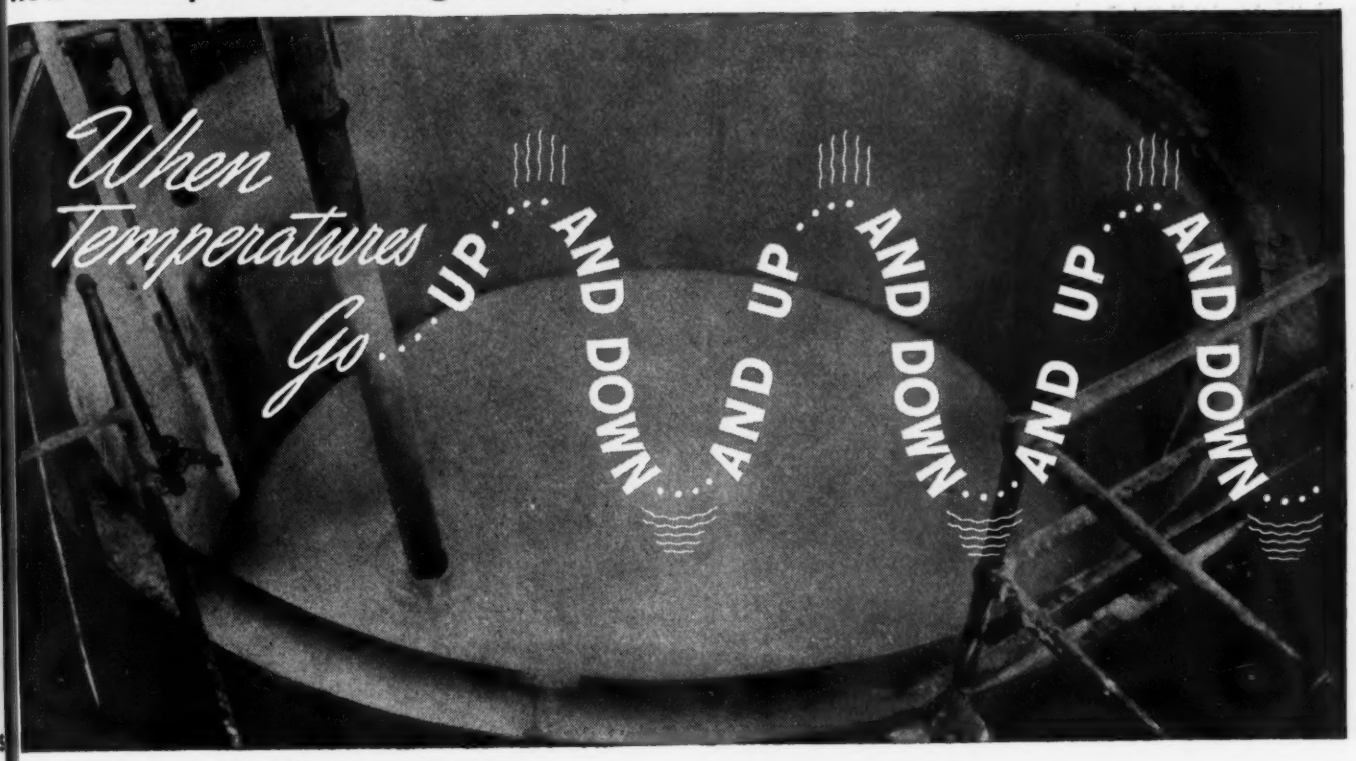
Tell us your problem—we will recommend the fire retardant best suited for your needs. Working samples are available. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington, Delaware.

DU PONT

FIRE RETARDANTS

Better Things for Better Living . . . Through Chemistry

How to Keep Acids Working for Victory . . . . . No. 1



TODAY, acids have a bigger job of work to do than ever before—helping industry turn out munitions, oils, metals, chemicals, fertilizers, textiles in a steady flow.

Shutdowns are critical. Everything possible must be done to prevent the breakdown of acid handling equipment.

* * *

High among causes of shutdowns in many acid processes are the repeated, drastic temperature changes to which tanks used to heat and cool acid solutions are subjected.

The continuous expansion and contraction, with its accompanying movement or working of the lining, is severe service for any material to withstand.

* * *

Tellurium Lead has been found by certain users to perform better than other types of lead under conditions where repeated and abrupt temperature changes occur. It is thought that this may be due, among other things, to Tellurium Lead's *work-hardening* property. As this lead is worked, it is toughened—increased in tensile strength.

The work-hardening property of Tellurium Lead is also a safeguard wherever lead must be bent, stretched or hammered as in elbows, flanges, coils, joints and turnover points.

* * *

Another source of acid equipment trouble is vibration. The resultant dynamic or fatigue stresses, acting in combination with corrosion, are more disastrous than either factor alone.

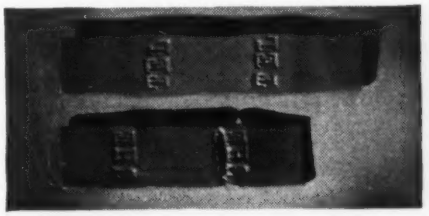
To meet this condition, Tellurium Lead not only has all the acid corrosion resistance for which lead is noted but, under vibration tests, it exhibits a 60% greater endurance limit than lead without the tellurium addition.

* * *

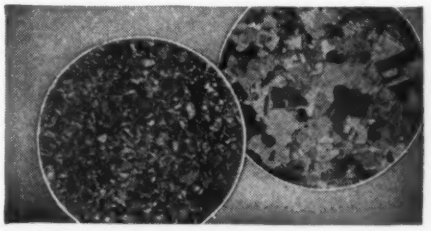
Undoubtedly, another factor in Tellurium Lead's resistance to corrosion under severe conditions of heat and stress is its finer, more uniform grain structure, shown in the accompanying photomicrographs. The surface of Tellurium Lead sheet and pipe is smoother—there is less possibility of pitting and local corrosion.

Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It is available in sheet or pipe form, or fabricated in coils for heating and cooling purposes.

For further information address the nearest Company branch listed below.



It *work-hardens:* These strips of Tellurium Lead (top) and regular lead (bottom) were stamped and pulled out in a tensile testing machine. Note how Tellurium Lead was strengthened by the stamping, whereas the other lead was weakened—and fractured.



Note Finer Grain Structure: Photomicrographs of Tellurium Lead (left) and ordinary lead (right), showing the finer, more uniform grain formation brought about by the addition of tellurium. Another significant point: In laboratory tests extruded strips of Tellurium Lead, annealed at 150°C for six months, showed no grain enlargement. Metallurgists agree that freedom from grain growth means less danger of rapid corrosion at elevated temperatures.

USERS "TELL" RESULTS

"We used your Tellurium Lead sheet to line an acid-cutting tank. Strong sulphuric acid is dumped into the tank and sufficient water added to bring it to the proper strength. This naturally generates considerable heat. The operation has been repeated daily for nearly three years. To date no leakage or other difficulty has been experienced. The lining is as good as the day installed."

* * *

"Tellurium Lead sheet was used to replace a tank lining which had been in service about three years. The old lining had bulged to such an extent that it rendered the tank useless. The Tellurium Lead lining has now been in service about two years. No bulging has occurred. The lead still conforms to the tank shape as snugly as it did on installation."

* * *

"We have just checked up on the condition of the 3-year old Tellurium Lead lining in our large sulphuric acid mixing tank. We found the lead to be very smooth and uniform with no signs whatever of buckling although the tank is used for cutting raw acid to low specific gravities. Comparison with other tanks in the same room and used for identical purposes shows that Tellurium Lead makes an ideal lining. The other linings have given us trouble by buckling and cracking open along the welded joints."

TELLURIUM LEAD

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis, National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

SPECIALLY DESIGNED *Speed Sweep* FOR TEXTILE MILLS

THIS Speed Sweep brush fits right into accelerated wartime production. It is really two exceptional sweeping tools in one. A slight twist of the handle makes it a perfect brush. Another twist makes it a perfect broom. As a broom it handles corners, obstructions, and cramped spaces with ease. As a brush it takes care of open floor spaces.

Both as a brush as well as a broom this Speed Sweep is unsurpassed in handling lint and other litter. Two center rows of tufts are of heavy Bassine fibre to handle rough dirt. Outside rows are of finer Union fibre to control dust and fine particles. These tufts are closely spaced, compact and trimmed flat for "spring and snap" action. They are hand-drawn (not just stapled) into a narrow block so that they cannot come out or come loose. The block itself is of light weight wood, re-enforced by a pressed steel back. The handle is adjustable to the height of the sweeper and can be reversed instantly.

Speed Sweep brushes have been proved by so many firms and under such varied conditions that they are sold with an unconditional guarantee to meet your requirements. You receive full credit if you return brushes within 10 days.

One simple twist of the handle makes it a perfect brush.

Another twist of the handle makes it a perfect broom.

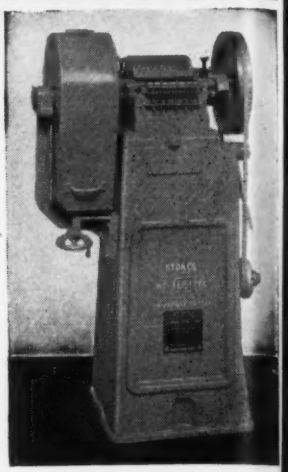
ORDER AS FOLLOWS:

CATALOG NO.	PRICES			
	6	24	96	Gross
No. 419 Speed Sweep *11" Block—5¼" Tufts*	$2.00	$1.75	$1.45	$1.20

Smallest shipping unit, six brushes. Prices are F. O. B. Milwaukee. Textile producers and processors are entitled to AA-2X (P-139) priority rating. This rating insures prompt delivery. Order Today.

MILWAUKEE DUSTLESS BRUSH CO.
525 N. 22nd ST. MILWAUKEE, WIS.

New! Universal Fibre Cutter



- Makes 500 to 20,000 knife cuts per minute. Handles 4 to 8 tops or equivalent simultaneously.
- For cutting Rayon, Silk, Wool, Flax, Jute, Cotton, other Fibres—Wet or Dry.
- With 4 interchangeable cutter heads produces full range of fibres, from Flock to 8" length.

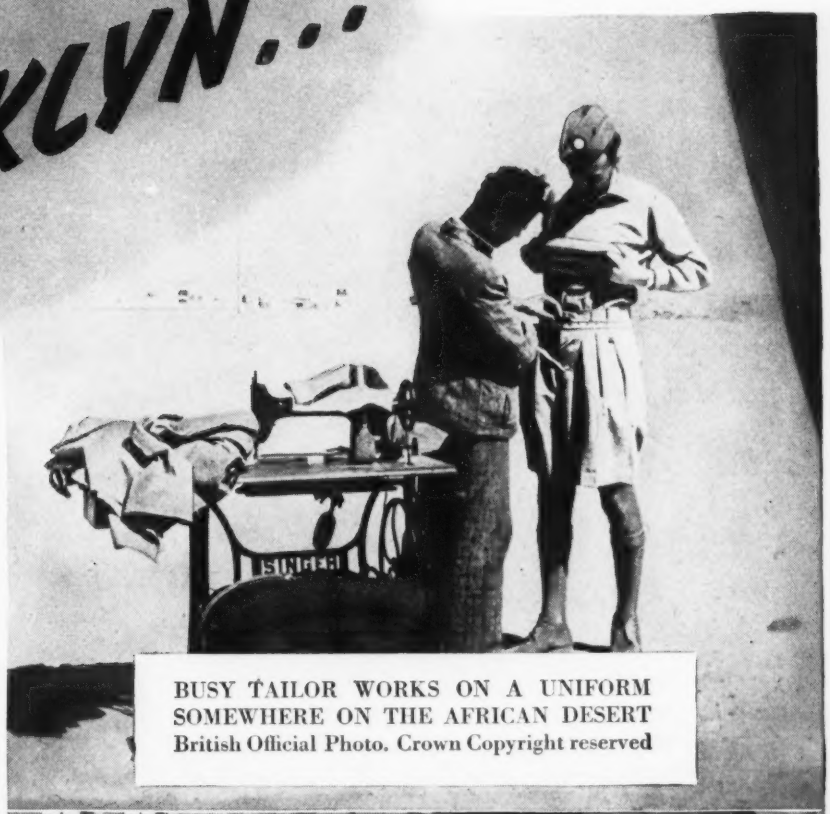
This is an improved machine, accurate, flexible, highly productive . . . for wet or dry cutting. Features include Self-sharpening Knives, Tension Release for Feed, Hand-wheel adjustments while operating, Ball Bearings, Balanced Heavy-duty Cutter Heads, Enclosed Motor, Clutch for quickly stopping feed rolls, Variable-speed drive synchronized with feed, and others. Fully described in Bulletin 42-FC.

F. J. STOKES MACHINE COMPANY
6004 Tabor Road Olney P. O. Phila., Pa.

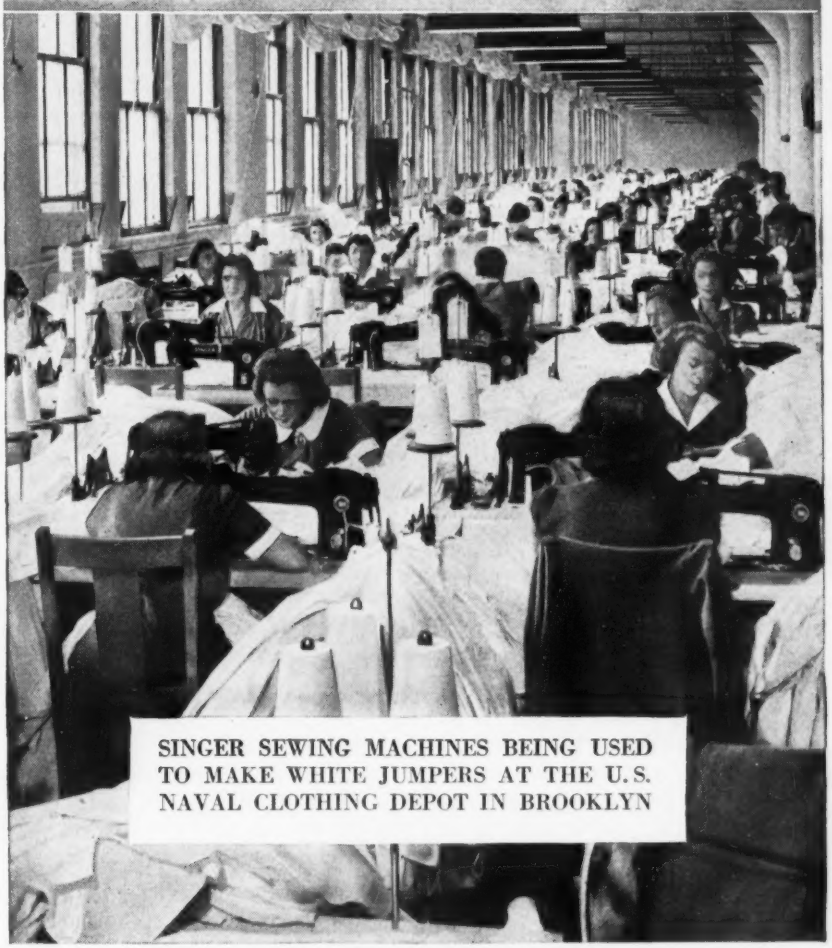
F.J.Stokes FJS Est. 1895

EMPIRE textile crayons
ACTUAL SIZE
THE IDEAL MARKING CRAYON
for all textiles
Made especially for marking the roving in wool, cotton, silk, rayon, and all textile mills. 18 colors available. Write Dept. TW-9 today for FREE Color Chart!
*REG. U.S. PAT. OFF.
THE AMERICAN CRAYON COMPANY
1706 HAYES AVENUE SANDUSKY, OHIO
NEW YORK SAN FRANCISCO DALLAS

IN AFRICA OR BROOKLYN...



BUSY TAILOR WORKS ON A UNIFORM SOMEWHERE ON THE AFRICAN DESERT
British Official Photo. Crown Copyright reserved



SINGER SEWING MACHINES BEING USED TO MAKE WHITE JUMPERS AT THE U.S. NAVAL CLOTHING DEPOT IN BROOKLYN

On the African desert, in Brooklyn, and many other parts of the world, Singer sewing machines are playing a vital part in clothing and equipping men for all branches of the armed forces.

Singer sewing machines formerly available for making hundreds of different things for civilian use are now sewing parachutes, gas masks, uniforms, tents, gun covers, shoes, powder bags, fur lined helmets, and many, many other articles needed to bring speedy victory to US. And if, like many others, you are having trouble getting Singer sewing machines, remember that Uncle Sam is our first customer, and his needs must be satisfied first.

SINGER SEWING MACHINES

SINGER

SEWING MACHINE COMPANY
Manufacturing Trade Department
149 Broadway New York, N. Y.

Branches in all principal cities

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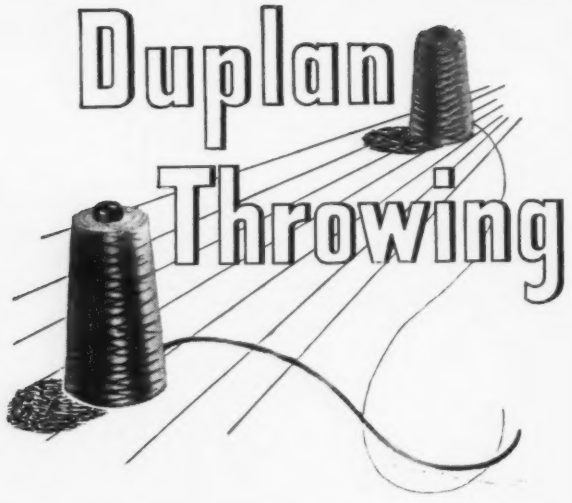
Duplan Throwing



From yarns for the sheerest hosiery to yarns for the sturdiest military and mechanical products.

★

Side by side with war problems, our four modern plants are throwing yarns for civilian requirements. The Duplan name stands for quality, large capacity, dependability.

THROWING OF

RAYON • ACETATE RAYON • NYLON

SILK • COTTON • WOOL

FOR KNITTING, WEAVING,

MILITARY AND INDUSTRIAL PURPOSES

★

Duplan has always had its feet on the ground . . . but as this war goes on much of our work is winding up in the skies. We are throwing miles of yarn for parachutes and other military requirements.

Innumerable new technical problems have been placed in our lap—and our staff has come up with the answers . . . which are helping our armed forces.

THE

Duplan

CORPORATION

512 Seventh Avenue, New York

Philadelphia, 18 West Chelten Avenue

Chattanooga, Provident Building

Charlotte, Johnston Building

Standing Guard over TEXTILES

Taber ABRASER

Rapid accurate wear tests with Taber Abraser can be applied to all types of weaves and knits from finest hosiery to heavy overcoating.

Taber Abraser requires only a small swatch making it practical to test every bolt or lot of fabric. Excellent for testing finished and unfinished goods.

Scientific wear action of the "Calibrase" wheels is totaled by the built-in wear cycle counter.

Guard your quality reputation from complaints and rejections with Taber Abraser.

Write today for Bulletin 4001.

TABER INSTRUMENT CORP.

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EASTERN REPRESENTATIVE

Designers, Builders of Precision Scientific Apparatus

Sterling
Ring Travelers
INSPECTION
Remember to inspect your rings for wear. If your Travelers are not giving you the old results, you might need a different style. Travelers are critical metals too.
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SOUTHWEST SUPPLY CO.
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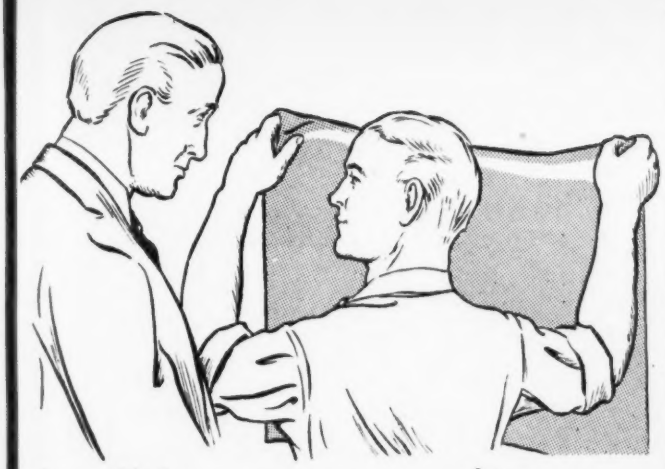
FALL RIVER, MASS.



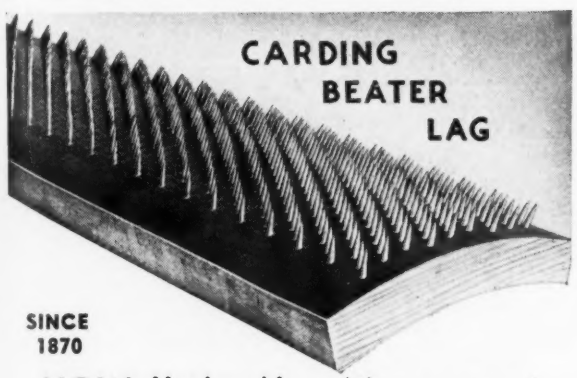
There'll be no rejects on this cloth since we switched to—

BOOTH
QUALITY CARD CLOTHING

Benjamin Booth Company
ALLEGHENY AVENUE and JANNEY STREET • PHILADELPHIA, PA.

51 YEARS OF SERVICE

PINS and LAGS
For Immediate Delivery



SINCE 1870

NOW Under New Management

J. C. BENNETT, *President* **R. N. NELSON,** *Sales Mgr.*
TOM WAINMAN, *Engineer*

A BIG MODERN PLANT PLUS 72 YEARS OF EXPERIENCE

It means that you can speed your production for the war effort by making use of all the knowledge we have gained on needle-pointed specialties for the preparation of wool and other fibres. In all the field—no plant like this—no such rich fund of experience—no such quality. Your inquiries will receive emergency attention.

We are experienced manufacturers of needle pointed goods and many specialties made to order.

WOOL and FLAX CARDS PINS
COTTON WASTE PICKER PINS
BAG or SHODDY PICKER TEETH
MIXING PICKER TEETH and PINS
WASTE MACHINE PINS
DOFFER TEETH
CORDAGE PINS
TENTER PINS
FALLER BAR PINS
SHODDY BAR PINS

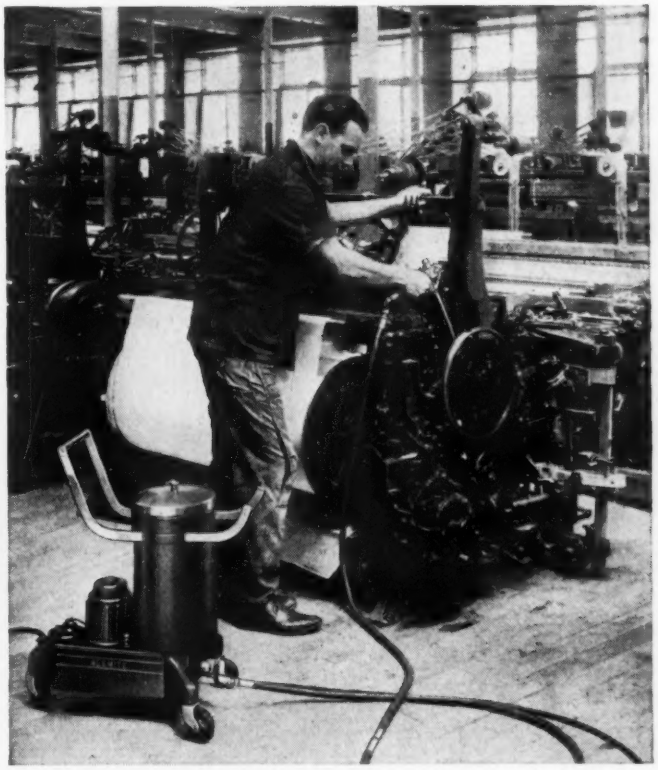
GILL PINS
HACKLE PINS
COMB PINS
FALLER BARS—PLAIN or PINNED
HACKLES FOR MACHINE or HAND
GILLS PINNED
TENTER PLATES PINNED
WET and DRY COMBS
FOR THE BRUSH TRADE

LAGS—GILLS—TENTER PLATES
ROLLER FALLER BARS
IRON RIVETS
PLAIN or STEEL CLAD LAGS FOR USE IN—
JUTE and FLAX CARDS
COTTON WASTE PICKERS
CARDING BEATERS
BAG or SHODDY PICKERS
WORKER ROLLERS—WOOD or STEEL
STRIPPER ROLLERS—WOOD or STEEL

LUMPERS
WIPING WASTE MACHINES
PINNED FEEDER SLATS
PLAIN SLATS
DOFFER PLATES
WASTE MACHINE—
DOFFER CYLINDERS—STEEL
FEED ROLL LUGS
PINNED FEED ROLLERS

WILLIAM CRABB & CO. **301-3rd Ave., Newark, N. J.**

How Textile Mills Speed Production— Save Vital Bearings!



ALEMITE SOLIDIFIED OIL

Meets Many Pressure Gun Needs— Reduces Number of Lubricants Required

Textile mills are playing an all-important part in the victory program, these days, and textile machines are producing as they have never produced before! That's why so many leading mills have switched to Alemite Solidified Oil—letting one tested lubricant do the work of several—saving lubrication time, avoiding confusion by reducing the number of lubricants required, and guarding the efficiency of vital bearings.

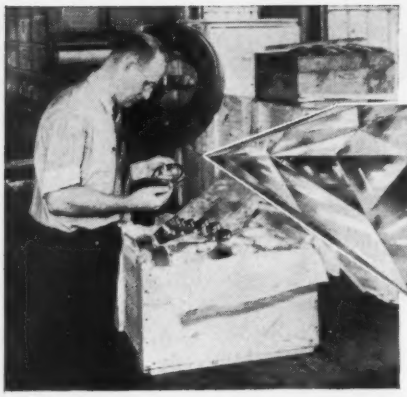
Front roll stands, looms, carding machines, knitters, and spinning frames—these are only a few of the textile machines on which Alemite Solidified Oil has proved its ability to save time, reduce product spoilage through contamination, and guard bearings. Write today for your FREE copy of the Alemite Industrial Lubrication Manual, which answers literally hundreds of lubricant questions!

Another Product of STEWART WARNER

ALEMITE
REG. U.S. PAT. OFF.
Industrial LUBRICATION

Ask Anyone in Industry!

1888 Diversey Parkway, Chicago, Illinois • Belleville, Ontario



Diamond Finish

Rings with a Record for Breaking Records!

In their 70 years, DIAMOND FINISH rings have built a reputation with a good many mill men for record-breaking long life. This reputation is based upon the one and only infallible test: actual use through the years. Specify DIAMOND FINISH rings (made in more than 1,000 styles and sizes) with confidence that they will start easy, permit top speed operation, and last extra long.

We make all types of Holders

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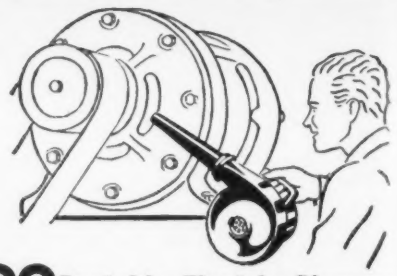
SPINNING DIAMOND FINISH **RING CO.**

Makers of Spinning and Twister Rings since 1873

Blow Out Dust — Keep Motors and Machinery Clean with



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PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs.

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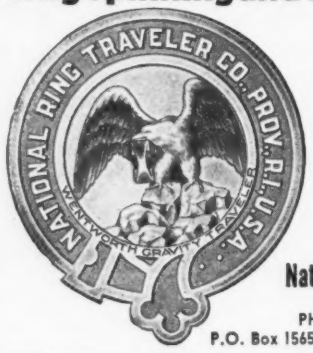

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A New Chemical Treatment

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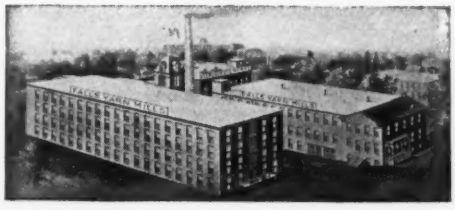

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For over 45 years Dary has been improving its Ring Travelers, until today it produces a Traveler of universally recognized superiority and durability!

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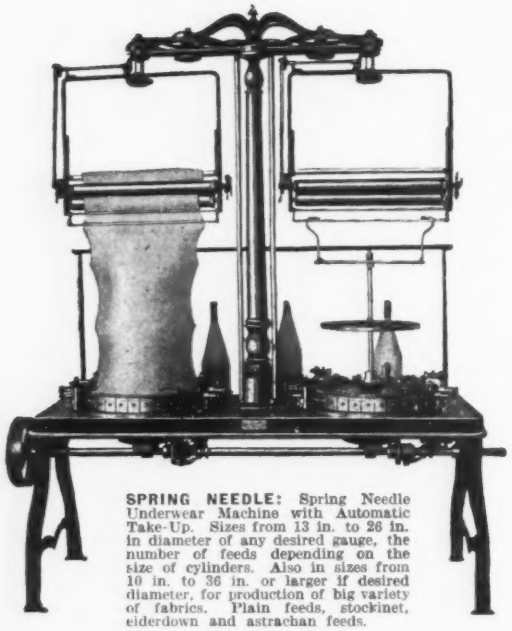
KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, elderdown and astrachan feeds.

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Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

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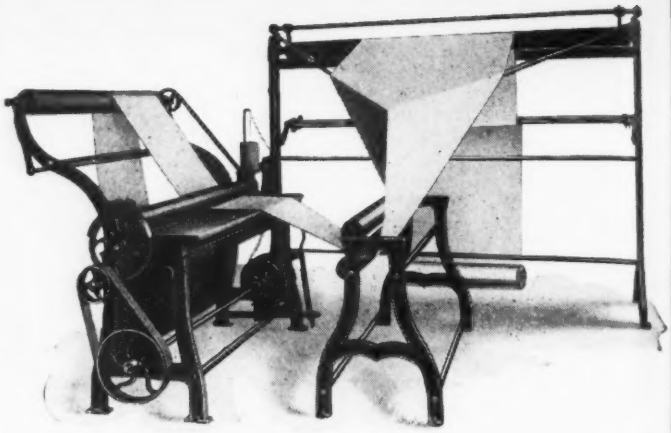

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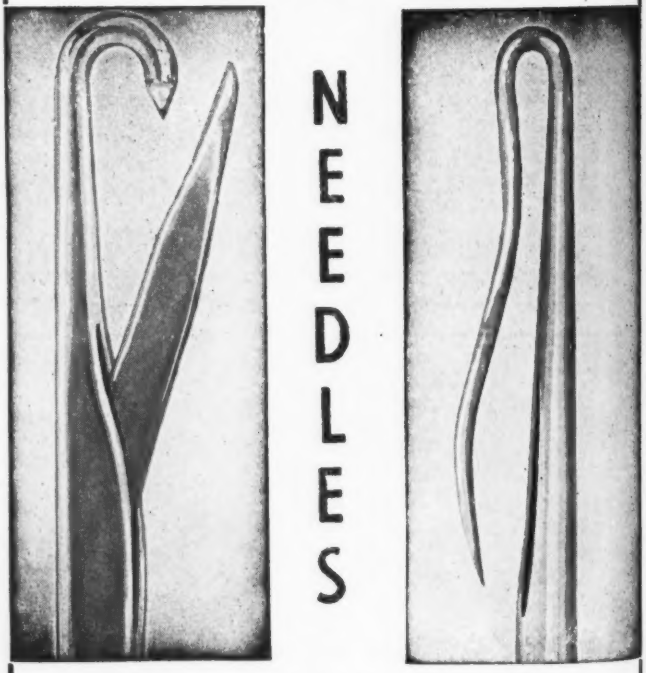

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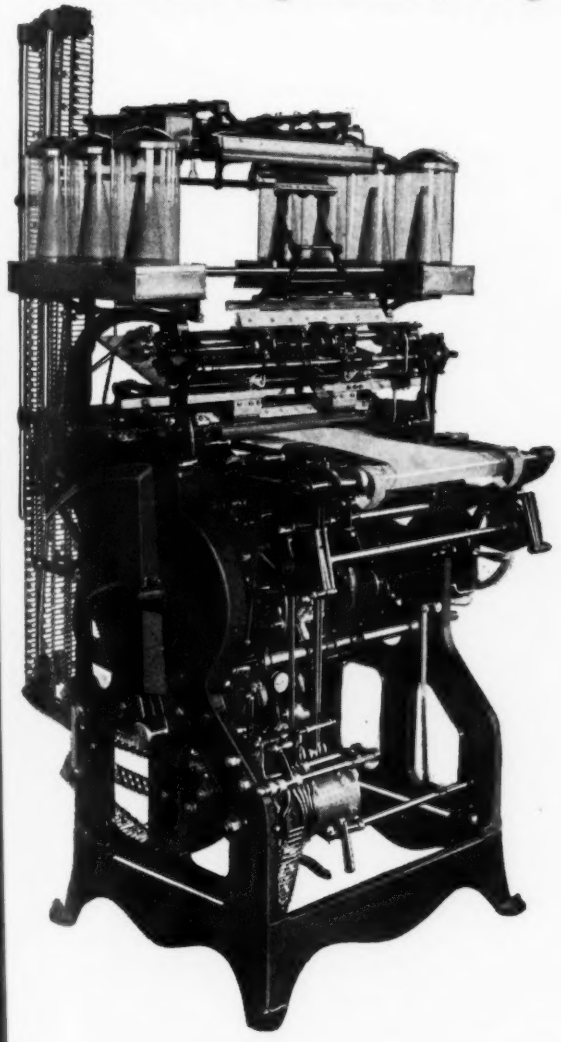
The MOST SUCCESSFUL WAR EFFORT IS A CHORUS

of the sum total of individual excellence in the ranks, each doing his part perfectly. In the stocking industry, outstanding performance is typified by the

WILDMAN Single-head, Single-unit Full-fashioned HOSIERY MACHINE



which is contributing an important part in the front line of production. By knitting a perfect stocking from top to toe in one continuous operation without stopping or change-over to leggers and footers it is saving thousands of man hours every day in progressive mills throughout the country.

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Because of war work our production today is restricted to supplying repair parts.

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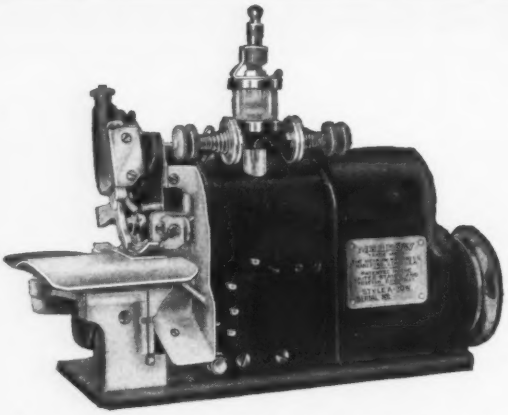

Merrow Class A Machines, illustrated, have made possible quality production, high speed, and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

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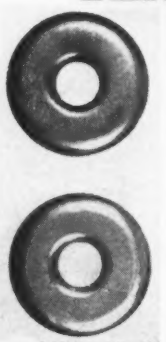

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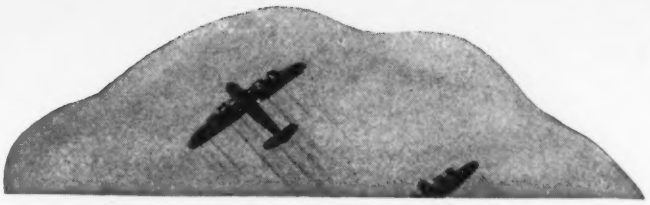
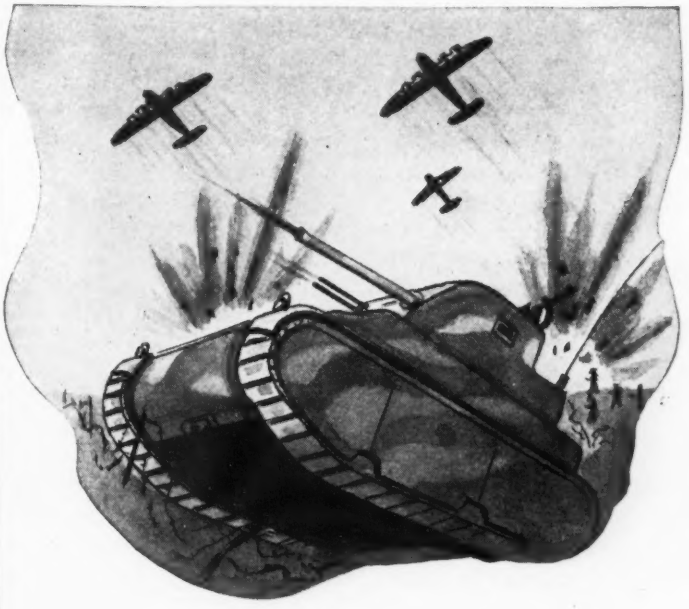
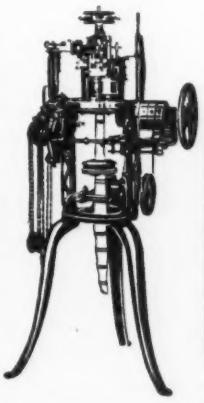


"FIRST THINGS COME FIRST"

FRANKLIN D. ROOSEVELT, PRESIDENT OF THE UNITED STATES



Your Uncle Sam has right of way insofar as our facilities are concerned. His requirements and his orders come FIRST, and we are proud to serve our country. At the same time, we regret that it may be necessary to ask our customers — users of Brinton Knitting Machines — to wait, until we can care for their needs.



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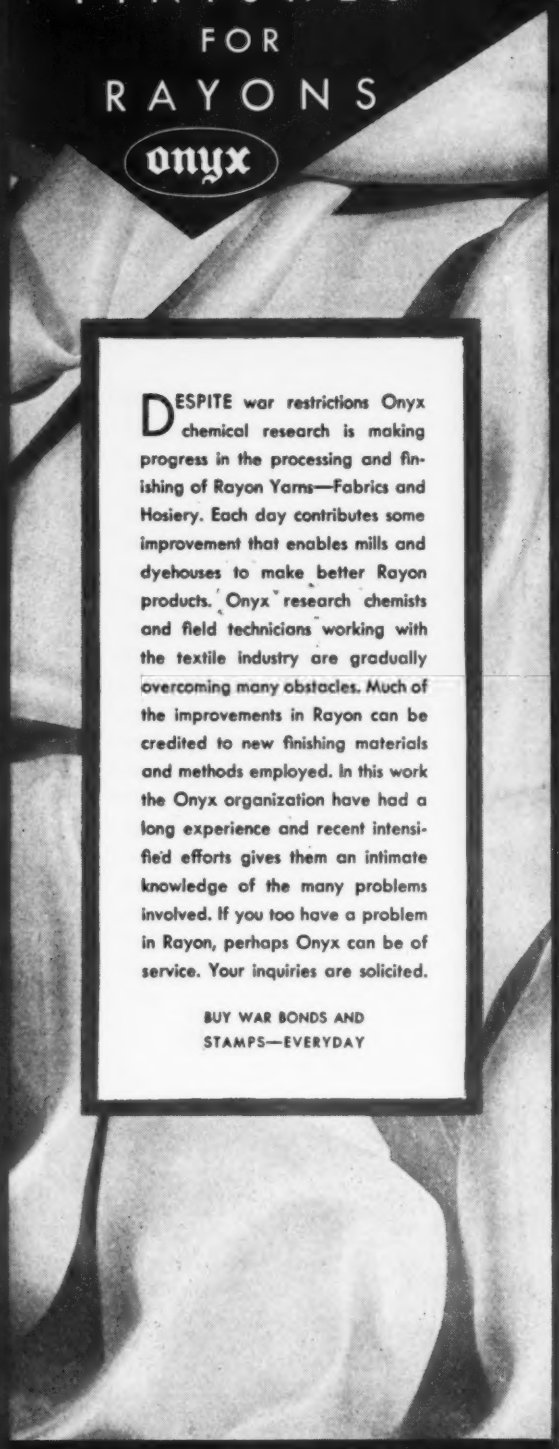

DESPITE war restrictions Onyx chemical research is making progress in the processing and finishing of Rayon Yarns—Fabrics and Hosiery. Each day contributes some improvement that enables mills and dyehouses to make better Rayon products. Onyx research chemists and field technicians working with the textile industry are gradually overcoming many obstacles. Much of the improvements in Rayon can be credited to new finishing materials and methods employed. In this work the Onyx organization have had a long experience and recent intensified efforts gives them an intimate knowledge of the many problems involved. If you too have a problem in Rayon, perhaps Onyx can be of service. Your inquiries are solicited.

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Understand protects yarns like standard starches yet desizes completely in soap and water.

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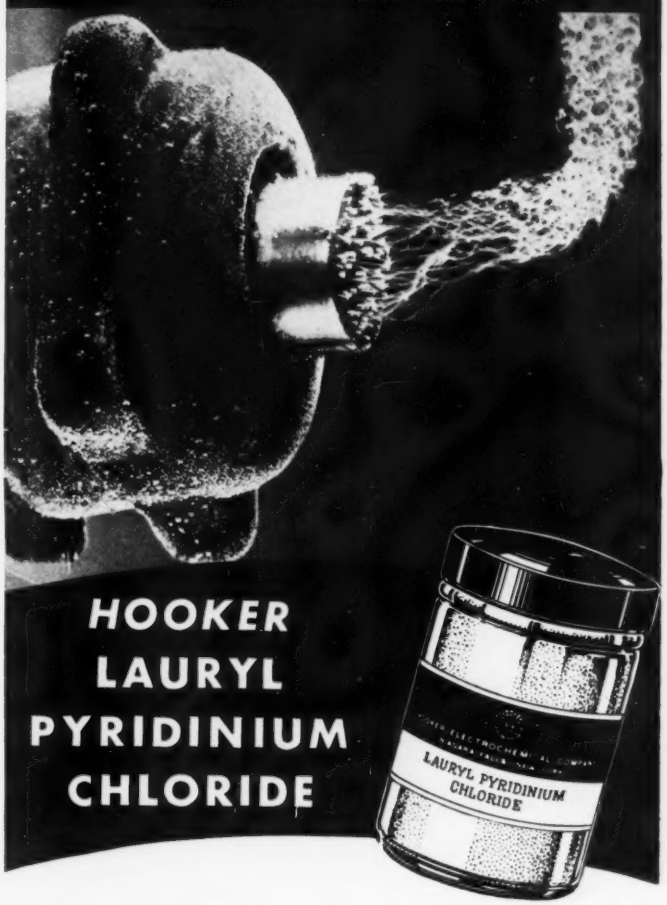

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"Gummy handle and bad odor,—what a headache!"

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"I have to reject more goods than I pass."

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Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

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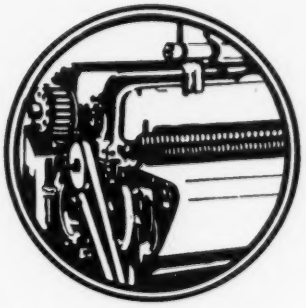

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Desires job with mill on war goods. XK or XD's preferred.

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Superintendent of Worsteds

A textile company seeks a superintendent for its mill in New England employing from 2000 to 3000 operators. The products involve all processes for worsteds from wool in grease through burling and mending. The applicant must fully know them and when employed he must demonstrate his ability toward one constant objective: better quality at lower cost.

An attractive initial salary supplemented by bonuses based on periodic performance are offered to the man who fulfills our requirements. Write complete information about yourself, your training, your experience, etc., in a confidential letter addressed to

P-512, Textile World
330 West 42nd St., New York, N. Y.

Over Forty Years of Dependable and Confidential **EMPLOYMENT SERVICE**
for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.
Phone: Liberty 6547 294 Washington Street, Boston, Mass.

POSITION WANTED

Have to offer exceptional experience in all phases of dyeing, bleaching and finishing of textiles. Desire connection with progressive concern in the U. S. or Latin America. Connection either permanent or in advisory capacity, age 42, married, American citizen, thorough technical training, executive ability.

PW-530, Textile World
330 West 42nd St., New York, N. Y.

WANT TO BUY

4—Fire Pumps 500 to 1000 GPM Cap.
3—50,000 to 100,000 Gal. Cap. Elevated Water Tanks on Towers.
3—Air Compressors 500 to 900 Ft. Cap.

TIDEWATER EQUIPMENT & MCHY. CORP.
305 Madison Avenue
NEW YORK, N. Y.

WANTED
Paper Dryer or Complete Coating Machine, also Other Equipment

Used paper dryer or complete pyroxylin or similar paper coating machine up to 54" wide. Also 50-gal. and 300-500 gal. mixers, filter presses. Not a dealer. Write full details.
P.O. Box 270, Morristown, N. J.

PROFESSIONAL SERVICES

WANTED!

Extractors, 40", 48", 60" baskets, copper or rubber lined, belt or motor driven; Nash Vacuum Pumps; Centrifugal Pumps; Colloid Mills; Air Compressors, from 100 to 300 cfm; Storage Tanks from 5000 to 15,000 gals.
We will pay top prices for any of the above. Send full details for quick action.

BRILL EQUIPMENT CO.
183 VARICK STREET NEW YORK

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915
Patents & Trade-Marks
Suite 448, 815—15th St., N.W. Washington, D. C.

WANTED
PLAIN MOTION LOOMS
For weaving Sisal Fibre, new or second hand in perfect condition. Write:

CASA MOLINA FONT
Apartado 101, Merida, Yucatan, Mexico

TO: Owners, Presidents, Treasurers, Agents, Purchasing Agents and Mill Equipment Buyers

Your problem of securing good used equipment for your mill is becoming more difficult, principally due to the needs of vital equipment for the war effort.

As a result, more of your time and energy is required to locate and check on suitable machinery—time which could be more effectively utilized in *must* production, particularly now when the acute manpower shortage is constantly forcing increased duties upon you. This condition will become more aggravated from day to day and we therefore put forward the following suggestion.

WE SUGGEST

your using the services of a recognized and reputable dealer in used equipment, one in whom you can place your confidence.

FOR THESE REASONS:

He knows what is available and where to obtain it at a fair price.

He can save you hours, days and even weeks of time.

By working through him you avoid the fallacious appearance of a great demand (often resulting in price advances) for items of equipment which is often brought about through the broadcasting of inquiries.

A reliable dealer will look after your interests and can be a tremendous asset to you. His is a service you can hardly afford to be without and we urge you to use it.

Should you have no regular dealer, we invite you to consider our services:

We have been buying, selling, inspecting and appraising good used equipment for more than 16 years and our greatest asset is the excellent reputation for good dealing which we have earned.

EQUIPMENT CURRENTLY AVAILABLE: A complete list of equipment we now have available for immediate delivery will be forwarded on request.

MACHINERY LIQUIDATING COMPANY

(OPA REGISTRATION NUMBER 789)

DOMESTIC • DEALERS IN QUALITY USED MACHINERY • *EXPORT*

Also: Inspecting, Appraising, and Liquidating

31-33 West 42nd Street
Telephone: PEnnsylvania 6-8014

New York, N. Y.
Cable Address: "LIQUIDATE" New York

Quality Used Mill Machinery for Cotton, Silk, Rayon, Wool; Bleaching — Dyeing — Finishing

LIQUIDATING

AMAZON KNITTING MILLS
MUSKEGON, MICH.

NEWPORT FINISHING CO.
QUIDNICK, R. I.

COMPLETE COTTON YARN MILL

CALENDERS
2—Perkins Hydraulic 60 ton, 50" Face.
3—V.V. Roll Calender 50 x 60" Face.
2—King & Gerber 2 Roll Embossing Machine 54".
1—Butterworth Schreiner 2 Roll, 44" Face.

DYE JIGGS
2—V.V. 60" Tensionless Monel Metal lined.
1—Werner 60" Stainless Steel.
1—Rice, Barton & Fales 50"—Stainless Steel.
2—Butterworth 72" Dye Jiggs.

DYE BECKS
1—General 12'—Wood.
2—V.V. 8'—Wood.
2—V.V. 6'—Wood.
3—S.S. lined 4' Dye Beck.

EXAMINING MACHINES
3—Inclined Examining Machine.
1—Werner Examining Machine 50" width.

TUBERS
8—Werner High Speed Tuber 50" width.

PALMER TENTER UNITS
1—Van Vlaanderen Palmer Tenter Unit, 40' x 60" wide, Marshall Williams Clips Stainless Steel Plate, Schwartz Guiders.

ROLLING UP MACHINES
1—50" Beaming, Winding and Rolling-up Machine.
1—50" Textile Beaming, Rewinding & Rolling-up Machine.

EXTRACTORS
1—V.V. 60" Rubber Basket.
4—Hercules 60" Rubber Basket.
1—Tolhurst 48" Copper Basket.
1—Tolhurst 30" Copper Basket.

CAN DRYERS
1—Textile 8 Can Dryer 23 x 60" Vertical Stack.
1—Butterworth 7 Can Dryer 23" x 80" Horizontal.
1—Textile 26 Can Dryer Copper 23" x 45" Vertical.

TENTER FRAMES
1—V.V. 60" x 60' long, S.S. clips.
1—Windsor & Jerauld 50" x 30' long.
1—Windsor & Jerauld 54" x 60' long.

LOOP DRYER
1—Continuous Loop, Double 50" Strand National Dryer, New 1942.

DECATERS
1—Parks & Woolson Semi-Decater 72" width, complete with motor drive.
1—Parks & Woolson Semi-Decating Machine, 50" face.

PRINT MACHINES
1—Werner 48" Single Color Print Machine.
1—Rice, Barton & Fales 10 Color Print Machine.

OPEN WASHER
1—54" King & Gerber Continuous Boil-Off Machine.

PALMER QUETCHES
3—V.V. 2 & 3 roll Quetches 50" to 60" Face.
1—V.V. Palmer Quetch 64" Width.
1—Morrison Quetch 2 Brass Rolls, 60" Face.

PADDERS & MANGLES
1—V.V. 50" 3-Roll Print Padder, Roller Beaming.
1—76" Textile Heavy Duty Padder, 3 Rubber Rolls.
1—Gessner 80" 3 Roll Mangle, Heavy Duty, Roller Beaming, 12" Diam. Rubber Rolls, Direct Motor Drive.
1—Textile Dye Padder, 45" width, 2 Rolls.
1—Textile Padding Machine, 45" width, 2 Rolls.

BUTTON BREAKER
1—Morrison 60" Button Breaker, equipped with Brass Rolls and Buttons, complete with Motor Drive, 3 H.P.

FOLDERS
4—Eastwood Raw Goods Floppers 60" width.
1—Elliot & Hall 45" Flat Folder.

MACHINE SHOP
1—George W. Fifield Lathe 48" Swing, 18' Bed, complete with Grinding Attachment, 1 H.P. R.P.M. Motor.
1—Threading Machine.
1—Planer Table 18" x 16".
1—Planer, Table, 30" x 16"
1—Star Lathe, 14" Swing, 3 Ft. Bed.
1—Radial Drill Press, 22" Table, Working Space as High as 48".

MOIRE
2—Cloth Impression Machines 50" face, complete with 2 H.P. 230 Volt 1200 R.P.M. DC Motor.

REELS
1—General Collapsible Grey Goods Reel, complete with Motor Drive and Clutch.
1—Cloth Opening Reel, Oval, 100" wide, complete with Motor and Reduction Box Drive, with Octagon revolving Cloth Opening Box.
4—United Show Machinery Co. floor operated 8-place marking machines quick setting.
3 machines with 7/32 size numbers.
1 machine with 5/16 size numbers.

BRAIDERS
107—New England Butt Co. 41 Carrier Flat braid machines are mounted on tables.
1—Crane Mfg. Co. Braid winder Spools from 3" to 8" lg. and up to 6 inches diam.
2—Spoolers, 40 spindles each, 4½ inch spools with 3 to 6 inch traverse.
1—Edging Spooler, 2 sides 7 spools per side, size 10½ x 6 inch diam.

RASCHEL KNITTERS
10—Raschel Knitting machines 60 inch (12 needles to the inch).
1—Raschel Knitting machine 60 inch (10 needles to the inch).
1—Raschel sample machine, 22 inch (12 needles per inch).

POWER EQUIPT.
1—1400 K.W. Westinghouse A.C. Turbo Generator Set with Condenser.

KNITTING MACHINES
30—Wildman's
Range 10 inch 10 cut 6 feed to 23 inch 10 cut 12 feed
200—Nye Tredicks
Range 10 inch 10 cut 8 feed to 23 inch 14 cut 12 feed.
1—Scott & Williams Tubular latch Needle Knitting machine 20" 16 Feed 14 Cut.
2—Copper Cuff Knitters 23 inch 6 Feed 14 Cut.
8—Scott & Williams latch needle tube knitters, Tables.

SEWING MACHINES
Union Special
25—54800
9—29200
50—35300
11—9900
3—15400

Union Buttons
10—Button Sewers
10—Button Sewers used as Tubers

Wilcox & Gibbs
5 lock stitch
1 flat lock

Metropolitan
4 193-5 elastic machines with elastic pullers.

Merrows
10 60 D Crochet
2 60 Q Shell stitch

MOTORS
200—A.C. electric from ¼ to 75 H.P.

FOLDING ROOM EQUIPMENT
2—Grand Rapids Textile Co. 2 1-2 folders for goods up to 28 inches wide.
2—Grand Rapids Textile Co. tubular cloth turning machines with brass turning pipe, 5" diam. by 13 ft. lg. with stand, rolls and countershaft.
30—Steam flatirons, units.
1—Conveyor, 100 ft. long.
2—Automatic steam pressing.

REPUBLIC TEXTILE EQUIPMENT COMPANY

REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

PURCHASE AND SALE OF USED MACHINERY

40 WORTH STREET • NEW YORK

"Kauft nicht von CONSOLIDATED"

A. Hitler

"Don't get it from Consolidated," der Fuehrer would advise you. Because getting Used Equipment from "Consolidated" means saving time—saving days, weeks, months— in getting that equipment into WAR Production that spells death to the Axis! But the wires, phone calls and letters that pour into our offices prove that American Industry IS buying from "Consolidated", and finds its confidence in "Consolidated" Service well placed and justified!

PRINTING MACHINES

9—Rice, Barton & Fales 3 to 8 Color Print Machines, 40" to 64" wide, with color pans, mandrels, star and furnisher gears, etc.

CALENDARS

2—Van Vlaanderen Ball Bearing Calendars, 50" face.
2—Morrison Ball Bearing Calendars, 50" & 60" face.
1—Morrison 3-Roll 64" Ball Bearing Calendar.
1—60" Embossing Calendar.
1—Van Vlaanderen 46" Calendar.

PALMER QUETCHES

3—Morrison & Van Vlaanderen 60" & 72" Palmer Quetch Units.

AGER

2—Agers, 6' wd, 9½' high, 30' long, B. B. brass rolls.
1—Textile Fin. Co. Ager, 5' x 10', with 50" brass rolls.
3—G.M.C. Agers, 10', 20' and 30' long.

KETTLES

2—Textile 200-gallon Copper Jacketed T Tilting Agitated.
2—Textile 100-gallon Copper Steam Jacketed Tilting Agitated.
2—Textile 70-gallon Copper Steam Jacketed Tilting Agitated.
3—Textile Copper Steam Jacketed Tilting Agitated Kettles, 50, 40 & 30 gallons.

LOOP AND NET DRYERS

3—National Loop Dryers, 28', 33' and 65' long.
2—Proctor & Schwartz Airlay Dryers.
2—Van Vlaanderen 50" & 66", 5 & 7-Tier Dryer, fin heaters.

PRINT PADDER

1—3-Roll Print Padder, Dry Tower with unit heater.

1500 Standard W-Bore Copper Print Rollers with designs, 28" to 45" lg, 14" to 20" in circumference.

COLLOID MILLS

1—Charlotte Homogenizer or Colloid Mill.
1—10" Premier Colloid Mill.
1—Premier 6" Colloid Paste Mill.

DYE JIGGS

1—Battery 4-Butterworth Stainless Steel lined Dye Jiggs, 45" face.
3—Werner 50" Stainless Steel Lined Jiggs.
1—Werner 57" Stainless Steel Lined Jigg.
4—Lincoln 50" Dye Jiggs.

OFFERING COMPLETE COTTON, SPINNING AND WOOLEN PLANT.

CAN DRYERS

300—Drying Cans, 50" to 108" face, 23" to 50" diameter.

SCOURING & DYEING MACHINES

1—Sargeant 3-Bowl Skein Scouring Mchn.
10—Klauder-Weldon Skein Dyeing Machine 20, 28, 30 sticks, hoist type.
1—Obermeier Package Dyeing Machine.
1—Obermaier 400# Vertical Package Yarn Dyeing Machine, with Wash-Off Kettle and two motor driven Centrifugal Pumps.

TENTER FRAMES

2—Windsor & Jerauld 50' Frames with Morrison stainless steel clips, 44" & 54" wide.
3—Van Vlaanderen and Windsor & Jerauld 60' & 70' Frames.
1—Morrison 90' Tenter Frame.

SKEIN DRYER

1—Phila. Dry Machine Co. Hurricane Continuous Skein Dryer.
4—Frank Bailey Truck Dryers with extra trucks, for skein and tubed yarn.

FULLING MILLS

6—Rodney-Hunt Fulling Mills, Gear Drive.

DOUBLERS

3—Parks & Woolson 46" & 66" Doubling, Reeling and Measuring Machines.

FLAT FOLDERS

6—Elliott & Hall Flat Folders, 42" to 60" wide.

OPEN WASHERS

1—Continuous Full Width Washer, consisting of 10 sections, 4 nips each section, 66" face rolls.
3—Rodney Hunt Full Width Washers, 66" x 12" rubber squeeze rolls.
1—60" Continuous Boil-Off Machine, Steel Tanks.
1—Grey Washer, 6-Nips, 60" wide, rubber rolls, iron tub.
1—4-Nip Grey washer 54" wide, brass & rubber rolls, iron tub.

STEAMERS

2—Steamers, 8" dia. x 20" long.
1—Devine Steam Jacketed Steamer, 5' dia., x long.

ROPE SOAPERS

2—Rodney Hunt 10' Rope Soapers.

SHEARS

3—Parks & Woolson Double Blade Shear, 66" with list saving device.
1—Parks & Woolson 3-Blade Shear, 60½", with list saving device.

BLEACH HOUSE

2—Bleach House Jay Pilers.
10—Bleaching 4-5 Ton Kiers, vomit type.
1—5-Ton Kier, Circulating type, with external heater, pump and motor.
2—Lincoln Double Roll Chemical Squeeze Rolls.
2—Arlington Rope Squeezers with clutch pulley drive.

BEAMERS-BATCHERS

4—Van Vlaanderen 50" & 55" Beamers.
Misc!: Scrutchers, Expanders, Generator Sets, Trucks, Air Receivers, Sewing Machines, Rubber Lined Tanks, Modine Heaters, Motors, Exhaust Fans, Pleaters, Mandrils, Doctor Blades, Gears, Lathes, Portable Agitators, Accumulators, etc.

DECATERS

2—David Gessner & Parks & Woolson 72" and 48" wide, complete with Nash Pumps.

RUBBING MACHINES

18—Werner 50" Rubbing Machines.
1—Werner 50" Felt Disc Rubbing Machine.

DYE BECKS

29—Dye Becks, Morrison, Van Vlaanderen and General, 3' to 8', stainless steel and wood boxes.

EXTRACTORS

3—Van Vlaanderen 60' Rubber Lined & Copper Extractors.
1—50" Copper Basket Extractor, underdriven Centrifugal machine, complete.
10—Burkhardt, Van Vlaanderen, Fletcher, Tolhurst and Haring & Stephen, 48" machines, copper baskets.
4—Tolhurst and Van Vlaanderen, 40" to 44" Copper lined Extractors.
1—King & Gerber 42" extractor, copper basket, self balancing type.
10—Tolhurst, American Laundry, Adams and Troy Copper Lined Basket Extractors, self balancing, 40", 32", 28, 26" and 20".

WORSTED SPINNING FRAMES

25—Ring Spinning Frames, 160 spindles each, 3½" pitch, 8" traverse, 1¾" ring, 4" front roll.

BUTTON BREAKERS

2—Textile & Van Vlaanderen Button Breakers, 60" & 72", brass rolls.

PADDERS, MANGLES, QUETCHES

4—Textile 50" 2-Roll Dye Padders.
7—Butterworth and Textile 50" 2-Roll Starch Mangles.
2—Textile 80" 2-Roll Mangles.
8—Butterworth and Morrison 2 and 3-roll Quetches, 50", 60" and 72" wide.

MERCERIZING RANGE

1—Complete Mercerizing Range.

WATER SOFTENERS

1—Permutit Water Softener, 103" high, 63" wide, cleanout 13" x 17".
2—10 x 10 Vertical Softeners, Zeolite piping, valves, meters and fittings.
2—Pressure Sand Filters, 8' dia., by 20' long, complete with pipe connections, valves and fittings.

SINGEING MACHINE

1—80" 2-Burner Singeing Machine.

VACUUM PUMPS

2—#3 Nash Pumps.
1—#2 Nash Pump.

IDLE EQUIPMENT IS TRAITOROUS

Any item of *usable* production equipment *not* being used is doing a traitor's job to slow up America's production. *Sell it to us*—we can place it where it's vitally needed! Write, or better still, wire us information on your unused equipment today—*now*. It may mean winning the next crucial battle for our freedom! We buy and sell single items or complete plants.

Supplying Textile Equipment for the DYEING FINISHING BLEACHING PRINTING WEAVING SPINNING OF RAYON COTTON WOOL WOOL FABRICS AND WORSTEDS

SAVE TIME *to* SAVE AMERICA

CONSOLIDATED PRODUCTS CO., Inc.

Address Inquiries to TEXTILE DIVISION, PATERSON, N. J., 5th Ave. & McClean Blvd.
Cable Address: Equipment, N. Y. Tel. ARmory 4-6540

New York City Office: 15 Park Row Tel. BArclay 7-0600

Supplying Equipment for: PROCESS • TEXTILE • MINING • FOOD • CHEMICAL • PLASTICS • CEMENT • PAINT • ROCK PRODUCT • RUBBER

TANKS ON TOWERS

25,000 Gal. Cap., 60 Ft. Tower.
35,000 Gal. Cap., 65 Ft. Tower.
40,000 Gal. Cap., 106 Ft. Tower.
50,000 Gal. Cap., 100 Ft. Tower.
50,000 Gal. Cap., 156 Ft. Tower.
60,000 Gal. Cap., 90 Ft. Tower.
65,000 Gal. Cap., 70 Ft. Tower.
100,000 Gal. Cap., 100 Ft. Tower
150,000 Gal. Cap., 19 Ft. Tower.

OIL TANKS

6—12,000 & 18,000 Gal. Horizontal Oil Tanks.
7—1000-5000 & 55,000 Bbl. Cap.

TIDEWATER EQUIPMENT & MCHY. CORP.
305 Madison Ave. New York, N. Y.

FOR SALE

Sargent 36 in. BURR PICKER.
Parkhurst 40 in. duplex Burr Picker.
Modern 48 in. Harwood Feed.
Payne Winders & Bobbins.
Tolhurst 40 in. Extractor.
TOMPKINS KNITTING TABLES.

EXTRA-CYLINDERS
(Both Spring & Latch Needles)
KNITTING PARTS

BURR-WHEELS
(All makes & Gages)

DAVIS & FURBER 80 inch NAPPER.
FIRSCHING SLITTING MACHINES.
CAMERON SLITTING MACHINE.
Bruce Power Die Cutting Machine.
Stafford & Holt "TERRYCLOTH" Knitter.
Knitting Machines.—All Kinds.

Geo. E. Smith Textile Machinery Co.
P. O. BOX 46 COHOES, N. Y.

FOR SALE

Scott & Williams interlock machines, 16 cut.

1—15"	8 feed
1—17"	10 "
1—18"	10 "
1—19"	12 "
1—20"	12 "
1—21"	12 "

Also Payne bottle bobbin winders and bobbins.

WARREN FABRICS CO., Inc.
West Warren, Mass.

FOR SALE

USED SILK AND RAYON ATWOOD THROWING MACHINERY — WINDERS — DOUBLERS — DOWN SPINNERS — FIRST AND SECOND TIME UP SPINNERS—REELS —CONERS—LYDON STEAM BOX—EXTRACTORS—FIBRE AND IRON HEAD BOBBINS—SHAFTING AND PULLEYS OF VARIOUS SIZES.

For further particulars address—

CRANE BROTHERS, INC.
Box 1108 Kingston, Pennsylvania

WILDMAN RIBBERS
BRINTON RIBBERS
SOTCO LOOPERS
UNION SPECIAL SEAMERS
LOOPERS & SEAMER TABLES

C. M. FRENCH
Commercial Trust Bldg., Philadelphia, Pa.

FOR SALE

30" LOOMS

76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

AMES BAG CO.
10 East 40th St. New York, N. Y.

TEXTILE AUXILIARIES

SPECIALIZING IN FINISHING MACHINERY FOR BLEACHERIES—DYE AND PRINT WORKS WATER—FIRE AND MILDEW PROOFERS AND RELATED INDUSTRIES

SHIPMENTS MADE PROMPTLY FROM OUR LARGE STOCK

BRANCH WAREHOUSE PAWTUCKET, R. I. **PROVIDENCE, R. I.** Tel. Dexter 9650 OFFICE AND CITY WAREHOUSE: 15-17 ORMSBEE AVE.

JOHN J. McCLOSKEY, Inc.
MANUFACTURERS AND DEALERS
TEXTILE MACHINERY OF ALL TYPES
APPRAISALS WOOLEN—WORSTED—COTTON LIQUIDATIONS
NEW AND USED
Philadelphia Office: 140-142 So. Front Street. Factory Warehouse: Collingswood, N. J.

Standard Mill Supply Co.
USED TEXTILE MACHINERY and SUPPLIES
For over 45 years serving domestic and export customers.
1064-90 MAIN ST., PAWTUCKET, R. I.
512-14 W. 4TH ST., CHARLOTTE, N. C.

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IMPORTER, DEALER AND MANUFACTURER
TEXTILE MACHINERY AND APPLIANCES
NEW AND USED
River Works, Andover, Mass.

GAINES TEXTILE MACHINERY CO.
Dealers in Rebuilt and Guaranteed Yarn Winding and Spinning Machinery
141-45 West 17th Street New York, N. Y.

FOR SALE

BUTTERWORTH CALENDER

7 ROLLS—80" FACE

3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

AMES BAG CO.
10 EAST 40th ST. NEW YORK CITY

Offering: 40" Wool Mixing Picker
Used Wool & Worsted Card Clothing
42" Open-Top "Weston" Hydro-Extractors
66" P&W SGLE Cloth Shear with list
48"x48" D&F 3 Cyl. Woolen Cards
66" C&M 2-Roll Steam Cloth Brush
24" Perkins Waste Shredder & Cutter
Gerry Rag Picker & 290 Universal Winder
1000 GPM 5" 2-stage Centrif. Pump

PAUL M. BROOMFIELD
15 Hathaway St. Boston, Mass.

FOR SALE—Hosiery Mill Machinery

We specialize in Scott & Williams, Reading, Banner, Wildman, Smith-Drum, Paramount and other types of hosiery mill equipment for seamless and full fashioned mills. Special attention to export trade.

MORRIS SPEIZMAN
508-14 W. Fifth St. Charlotte, N. C.

20—4 x 4 Crompton & Knowles heavy worsted looms 72" reed space, now running on No. 8 duck equipped with ball bearings and individual motors.

Also 15—2600 hook Crompton & Knowles double lift jacquard machines. All in first class condition.

Can be inspected at:

ALBERT J. BARTSON, INC.
314 East 6th Street Charlotte, N. C.

FOR SALE

All types of Circular and Flat Knitting Machines, also Parts and Latch Needles. State your needs or send us a sample to match.

A. LIBERKOWSKI
MELVALE MACHINE WKS.
3322 Melvale St. Phila., Penn.

FOR SALE

Offering four sets of Dryer Cans 23x142" Butterworth Upright Type erected nine to a set.

Advise promptly if interested

FS-513, Textile World
330W. 42nd St., New York, N. Y.

---

36 IN. HOBBS SLITTER
Good Condition—Motorized
Replaceable ring cutters.
Any reasonable offer considered.

60-FT. BUTTERWORTH PIN TENTER FRAME
Good Condition. Handles material to 40 inches. Will sell cheap. You can afford to widen.

BERNARD A. WEYL, INC.
80 First Avenue Pittsburgh, Pa.

New "SEARCHLIGHT" Advertisements

received by April 1st will appear in the April issue subject to space limitations.

Address copy to the Departmental Staff

Textile World
330 West 42d St., New York City

NORMAN M. McDOWELL

342 E. 142 St. ASSOCIATES Bronx, N. Y.

REBUILT & USED BUY WITH CONFIDENCE MELROSE 5-1772-3

DYEING & FINISHING

1—**C & M** Doubling Packing Machine.
1—**TENTER FRAME** 60' x 52" wide, with batcher.
2—**RAILWAY SEWING MACHINES** 50" & 72" widths.
8—**SHEARS,** Single to 4 Blade units, 40" to 88".
1—**QUETCH** 2 roll, 67" wide with size pan.
3—**PAIR RUBBER SQUEEZE ROLLS** 60" to 63" widths.
3—**MANGLES** 42" to 66" widths, heavy duty.
2—**ROTARY STEAM PRESSES** 66" wide, Double Beds.
3—**NAPPERS D.A.** Woolen 66" to 80" 20 & 24 rolls.
2—**NAPPERS D.A.** Cotton 80" 20 rolls, self oilers.
1—**NAPPER GRINDER** 90" rolls, automatic tripping.
5—**FULLING MILLS,** Double compartment units.
1—**MEASURING MACHINE** 40" wide, clock 100 yd.
1—**FOLDER,** ceiling type 45" width on roll.
1—**FOLDER,** cloth, 46" mtr. drive, 1¼ yd. folds.
1—**DRYER, SKEIN** 46", horizontal roller chain.
1—**DOUBLER** 66" folding & measuring.
1—**EXTRACTOR** 48" underneath belt drive.
2—**EXTRACTORS** 42" overhead motor driven.
2—Johnson Novelty Drying Heads & Baskets.
1—**SEMI-DECATUR** 72" x 12", Nash Pump & Motor.
1—**EMBOSSING CALENDER** 43½" 2 extra sets design rollers, 2 rolls per set, motor driven.
1—**CALENDER** 5-bowl 47" face, mycock expander.

CARDING & SPINNING

2—**SETS D&F** 3 cylinder Cards 60x48 complete.
8—**SETS** 3 cylinder Cards 48x48 complete.
3—**TAPE CONDENSERS** for 60" Cards, 144 ends each.
1—**CONE DUSTER** 10', feed, picker & feed rolls.
12—**SETS MULES** 200 to 336 Spindle units 1⅞" to to 2¼" Gauge.
3—**D&F** Dreadnought Shredding Pickers 48", iron construction throughout, complete.
6—**GARNETTS** 60x20, 2 cylinder units complete.
4—**SHREDDERS** 48" & 60", Breast, workers complete.
8—**SPOOLERS** 40" width compressors, clocks & stands.
3—**TWISTERS** 224 Spindles each, 3½" Gauge, 2½" Ring.
1—**TWISTER** 72 Spindle, 4½" Gauge, 3½" Ring.

MISCELLANEOUS

Bristle Brushes 38" to 80" widths.
BALING PRESS Platform 34x54, Reversible.
POWER PAPER CUTTER 40" width 2 blades.
EXPANDER ROLLS 63" to 95" widths.
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950—14x7 Bobbins—Soft Wood
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165—14x7 Bobbins—Tie Rods
225—14x8 Bobbins—Soft Wood
304—14x8 Bobbins—Hard Wood
39—14x8 Bobbins—Tie Rods

MISC. BOBBINS

2000—(Approx.)—Roving Spools, 9x4½"
500—(Approx.)—Cone Reducer Spools—10x5—with Plates.
93,594—(Approx.)—7"—3 Ring Draper Bobbins
15,475—(Approx.)—8¾"—3 Ring Automatic Loom Bobbins
30,000—(Approx.)—8" — Automatic Loom Bobbins
583—(Approx.)—8x4 Cone Reducer Bobbins
11,500—(Approx.)—Double Head Twister Bobbins—5"x2"x1⅞
75,000—Twister Bobbins—6"x2"x1¾"
38,300—Wood Cheeses, 6⅞"x1 1/16"

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Box 495 Pawtucket, Rhode Island

FOR SALE

1—Sargent Yarn Conditioner, motor drive 220 V.
1—60" Single Roll Batcher.
3—#4 Reeves b.b. Drives, ratio 2-1.
1—P&S Raw Stock Dryer, 72" wide x 60 ft. long.
1—#0 Sturtevant Exhaust Window Fans 36"-48".
1—Eppenbach Colloid Mill.

BTS

BOBBINS—SPOOLS—SUPPLIES

Direct Factory Agents Walter L. Parker, Bobbin & Spool Company

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE

1—UNIVERSAL #40 CONER, 100 spindles, equipped with late type electric head; motor driven; arranged to wind on wooden cones.
1—UNIVERSAL #40 CONER, 70 spindles—as above.
1—UNIVERSAL #40 WHIRLWIND WINDER, 70 spindles; motor driven; arranged to wind on wooden cones.

Winders in excellent condition.

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330 West 42nd Street *New York, N. Y.*

* * * * YOU * * * * were at Casablanca

THE interesting thing about this Casablanca business is the terrific wallop our country is packing in international affairs these days.

We've been on the muscle just a little more than a year, now, but the boys who came up through the prelims are already calling us "Champ" . . . and it looks as though the other corner of the ring is beginning to dread the finals.

▶ How come? It wasn't so long ago that Brenner Pass and Berlin meetings were dominating the world's headlines.

YOU made the difference. "You" meaning every American who worked hard last year in America's war industries. Because a statesman, or a general, can only be as good as the industrial strength he represents.

▶ By the very act of shunting America's mighty industries from making peacetime things like automobiles and streamlined trains to making wartime things like ships, bombers and guns, the voices of your representatives were magnified from whispers to thunder in the councils of war.

YOU were at Casablanca (*Cont'd*)

If that makes you feel pretty proud, as a part of the industrial system that is going to burn the bearings of the Axis, maybe you'd better think about what is going to happen to our industry (and, incidentally, to your job) after the war is over.

▶ Things could get in a terrible mess, you know. We'll have the biggest debt in the history of the world, and 10 million soldiers and sailors to find jobs for.

The only thing that will save us will be the last thing most folks will think of—making it easy for business to grow.

If business grows, jobs grow.

Good business is the source of all good living.

America invented the method that produces better living. Here it is:

1. Constantly improve the equipment available for the worker.
2. Use the lowered costs thus produced to
   (a) Lower prices to consumers.
   (b) Improve the standard of living.
   (c) Provide incentives for invention, leadership and investment.
   (d) Lay aside "Seed Money" that can be used to start over again at item 1.

That's all there is to it. That's what gave us the highest living standard on earth. It can take up the job after the war, taking care of you, the soldiers, the sailors, and the war debt—IF it is allowed to operate.

But there are hundreds of laws that gum the works. Both business and labor need laws, the same as any other humans, but they need laws that will *lubricate* the industrial machine.

Let's take two of the gummy ones: There's a law that says a business must take 20 years to charge off a machine. Look what that does to item 2 in our "recipe for good living." Most machines are obsolete in 5 years, and government should encourage scrapping them. Obsolete machines *prevent* lower costs and *keep* wages down.

Another law, the excess profit tax, confuses business profit ("Seed Money") with private profit. In preventing a crop of war millionaires, this law also takes away most of the "Seed Money" that business should be saving for the big expense of converting back to peacetime work.

That law ought to be changed. If you think so, too, ask your congressman to study all laws with this principle in mind:

"What's Good for Business is Good for Americans"

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22 publications, which gather "war-news" from the "war-production-front" through a staff of 153 editors and 725 engineer-correspondents . . . More than 1,500,000 executives, designers, production men and distributors use the editorial and advertising pages of these magazines to exchange ideas on war-production problems.

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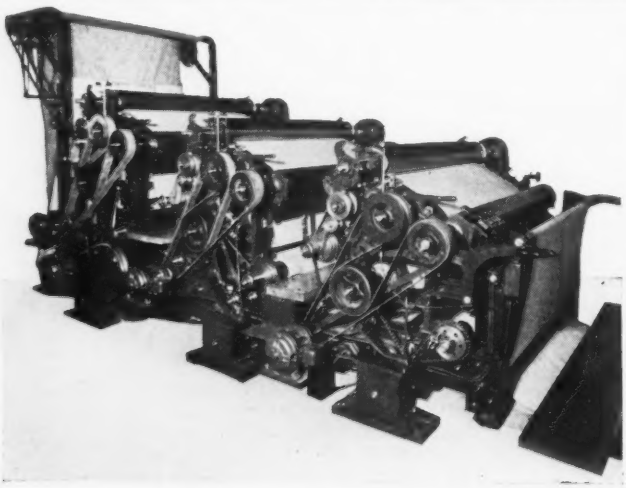

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NO LIFTING AND ONE MAN

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AUTOMATIC HEADING-SAVER
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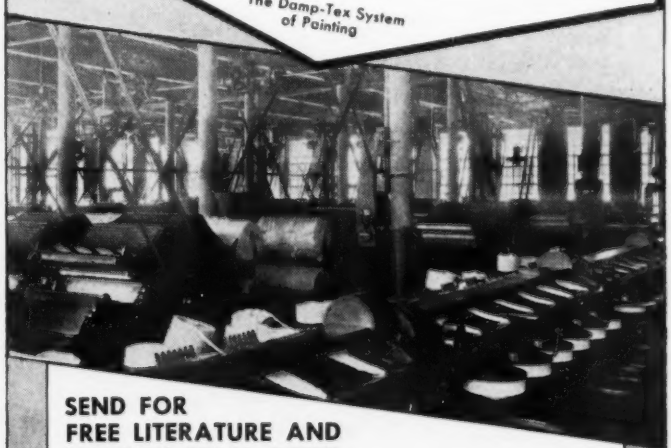
6. Can be washed repeatedly. See no-risk offer below.

*The Damp-Tex System of Painting



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STEELCOTE MFG. CO., SAINT LOUIS, MO.

If it's a Steam Process

SPEED UP WITH SARCO No. 9 Steam Traps

Whenever you see a cluster of Sarco No. 9 Steam Traps you can be sure of several vital features in the equipment they serve.

1. No one steam coil can hold up another. They are all working at top speed.
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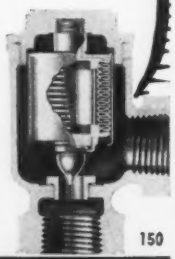
3. There's no trouble starting up. It is wide open when cool.
4. Varying steam pressures will not affect the operation. No seats to change. It's the only thermostatic steam trap made for pressures up to 250 lbs. Catalog No. 250.



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MEAN IMPORTANT SAVINGS IN YOUR PUMPING JOBS!

TWO-STAGE PERFORMANCE AT SINGLE-STAGE COST

▶ Because of the unique turbine design of Westco Pumps, a *single*-stage Westco will continuously supply high operating pressures that would require a *two*-stage centrifugal pump. Thus, Westcos save on *first* cost...on *operating* cost...*on maintenance!*

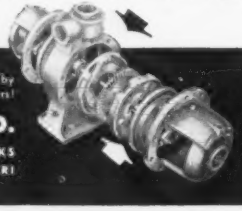
PERMIT FUTURE EXPANSION OF SYSTEM

▶ Westco operating characteristics are such that additional outlets can be handled with *decreasing* horsepower requirements... whereas centrifugals would require *additional power* to maintain operating efficiency. In this way, Westcos reduce *both* cost of expansion and cost of operation if future additions to system become necessary.

PROVIDE STANDBY PROTECTION AT LOWEST COST

▶ Westco's *renewable liner* feature eliminates need for an entire separate pump assembly for safe standby protection. By simply keeping an extra liner assembly on hand, Westcos can be quickly and economically renewed at a *fraction* of ordinary cost.

But get the full Westco story of *peak performance* at unusually low installation and operating costs *before you invest* in ANY pump equipment. Ask your Westco dealer — *or write direct!*



On Westco Pumps, wear and corrosion are taken by *renewable* liners. To renew pump, simply renew liners!

WESTCO-POMONA PUMP CO.
DIVISION OF JOSHUA HENDY IRON WORKS
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Wherever machines run and wheels turn — in industrial plants, service industries and on farms — wheel pullers are essential for efficient maintenance and repair work. ARMSTRONG-BRAY wheel pullers are of 2 types: (1) CHAINGRIP universal pullers—pull wheels, pulleys, gears and pinions even at considerable distance from end of shaft; (2) STEELGRIP rigid arm pullers (11 sizes, 2 or 3 arm models).

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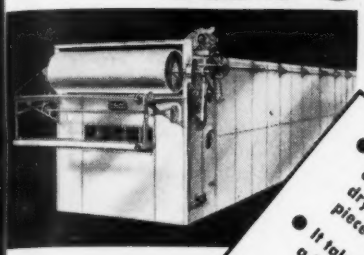
Caldwell TANKS AND TOWERS

PROCTOR *Loop* DRYER



- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quetch, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
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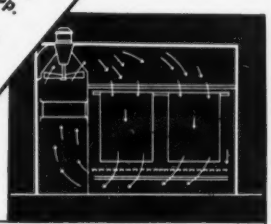
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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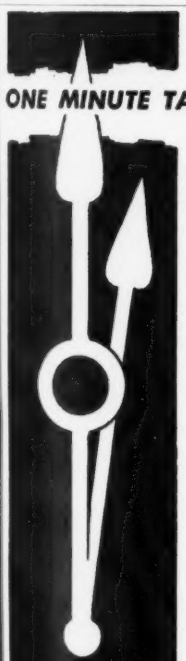

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Is Your Diesel Engine Overheating?

If it is, that's a danger signal to watch! It means that lime-scale and rust deposits are preventing proper heat transfer, which, if unremedied, may cause friction and increased wear of parts, greater fuel consumption.

You can avoid these costly troubles by periodically de-scaling your Diesel cooling system the SAFE Oakite way! Simply circulate a solution of OAKITE COMPOUND No. 32 or allow to "soak" as directed. Method thoroughly removes insulating lime-scale and rust deposits . . . restores normal heat transfer efficiency . . . returns units to service quickly. Write for FREE, 24-page manual giving details!

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Wissco

CARD AND NAPPER CLOTHING

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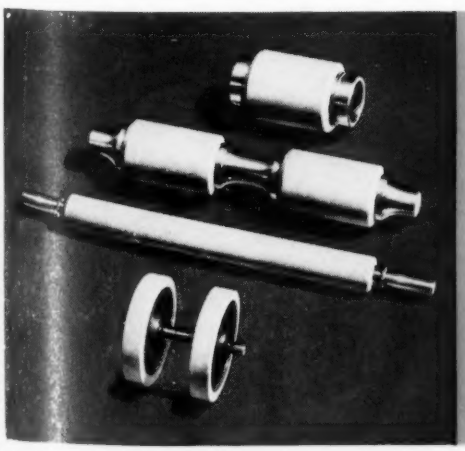

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